Gas Journal

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KING GEORGE V.

IN this hour of sorrow, common to so many millions of hearts throughout the world, let us remember first those whose grief is still more intimate than our own, those who, while we others mourn the loss of a beloved monarch whose character made him also a friend to each one of us, have seen depart a husband and father from a family circle which typified all that is finest in our national life. Then let us be truly grateful that our late King was spared, when seven years ago his life had been almost despaired of, to give us, and indeed the whole world, the opportunity of demonstrating to him last year not only the loyalty, but the love and affection in which we held him. For is not the sadness of to-day tempered by the thought of yesterday, by happiness in the sure knowledge that no possible doubt could have remained to him of the intensity and unanimity of our love ? It is given to few men to receive towards the end of their days on earth such incontrovertible proof that their life's work has evoked universal gratitude. We know our beloved King was man enough to be deeply touched by the only reward we were able to give him for his untiring devotion to our every interest; for this let us be thankful. And, finally, let us express simply and sincerely our unswerving devotion to the Crown, and, not only in his immediate hours of trial, but in the many years of health and success which we wish him, let our thoughts and sympathies be with our new King in the responsibilities which he bears on our behalf. We already know him well, we love him well, we all have every confidence that, within the scope of his power, nothing will be left undone by him that will tend to the maintenance of the prestige, the prosperity, and the progress of the British Commonwealth of Nations, and its people.

Editorial Notes

Gas and Leeds University

THE debt which the Gas Industry owes to the special and thorough training given now over a long period of years by the Fuel Department of the University of Leeds is recognized in all quarters. Men trained at Leeds to apply their minds to the fundamental problems of fuel production and utilization have in no small measure contributed to the prosperity of our Industry. That many now occupy prominent positions in the Industry—and in this we rightly include the manufacturers' section—is in itself ample tribute to Leeds training. Not, of course, that the Leeds curriculum has not been subjected to criticism. It has its faults as well as its virtues. The main criticism, we think, is that it tends to produce gas chemists, as such, rather than gas engineers. But to our mind the force of this criticism is wilting with the growing appreciation that a gas engineer should in the first place be a fuel technologist. More and more this will be brought home to us. To our mind, too, it is quite absurd to suggest that Leeds University—or any other University for that matter—produces gas engineers. What it does, and it does this well, is to give the youthful and impressionable mind a foundation for a useful career, a clear view, we may say, of what fuel problems imply. And, as any graduate of the Fuel Department of Leeds University well knows, though he would be the last to prate about it, the work of training in the Department is not play, and the term vacation does not necessarily mean holiday. In a sentence, Leeds training provides an important card of entrance into a vast and growing public utility. To the Livesey Professor, J. W. Cobb, it must give singular pleasure to reflect on what the Leeds Fuel Department means to the Gas Industry. He has seen the Department grow, under his guidance, into maturity. This guidance has been wise and influential. Eschewing the dramatic, pursuing a steady policy, he has strengthened the link between University and Industry. This link will not be broken.

Just to hand is Professor Cobb's Report to the Livesey Advisory Committee on the work of the Department for the 1934-35 session, and it makes encouraging reading. It is a happy sign for the future of our Industry that in the session which started in October last there was an exceptionally large entry of new students. Most of the entrants are from school, but young men already in industry continue to leave their posts in order to spend three years in the University on a degree course, which, in Professor Cobb's words, " will better their professional equipment and prospects while conferring other advantages less easily definable." We have mentioned the criticism that the Fuel Department of Leeds University tends to produce gas chemists; and in view of this it is interesting to call attention to an important change in the attitude of the Institution of Civil Engineers during the year which the Report covers. The Institution now accords to graduates from the Department the recognition hitherto confined to graduates in Civil, Mechanical, and Electrical Engineering. In the past graduates of the Department wishing to become members of the Institution of Civil Engineers were compelled to sit for the whole of the examinations prescribed for Associate Membership. Now a Leeds graduate in Gas Engineering, with Honours, is granted exemption from Sections A and B of the examination, and an ordinary graduate receives exemption from Section B. This recognition by the Civils is gratifying, but we cannot quite see why Honours men are more qualified *as engineers* than ordinary graduates. For example, the present holder of the William Cartwright Holmes Scholarship has passed the examination for the " ordinary " degree of B.Sc., though he has to give a further year's attendance before the degree can be awarded. During this time he will be engaged on research work with a view to taking Honours. After carrying out this piece of research—which, we take it, is a whole-time job—he will, if successful, which we do not doubt, automatically become a more eligible engineer. Frankly, this puzzles us.

A Desirable Development

WHAT appeals to us most about Professor Cobb's Report is the reference to Chemical Engineering. Here, we feel, is need for expansion of the Department's activities. The Department's curriculum, particularly as developed in recent years, " may well be regarded as that of a specialized branch of chemical engineering." We quote Professor Cobb. A proportion of the graduates become chemical engineers and seek and obtain membership of the Institution of Chemical Engineers. At the same time a fuller and more general training in Chemical Engineering should be given to the students to equip them for modern industrial demands which, as Professor Cobb rightly points out, lie so largely in that direction and are certain to do so even more in the future. The existence and co-operation of the other departments of Applied Chemistry and Engineering in the University, with their staffs and equipment, would make possible provision for the teaching of Chemical Engineering without incurring heavy initial charges, though financial provision would have to be made. This suggested development is definitely of direct interest to the Gas Industry, which is so closely associated with the University; and there is no doubt that Leeds University is in an exceptionally favourable position for undertaking it.

A further important event of the year has been the arrangement concluded by which the Iron and Steel Federation and the Iron and Steel Institute support financially and otherwise investigations in progress in the Department on certain properties of gaseous fuels used in furnaces. Actually an investigation concerning the metallurgical aspect of the influence of sulphur compounds on the scaling of steel, especially in the treatment of special steels, has been in progress in the Department for twelve years, and it is most encouraging to be able to record in these columns that its value is so recognized by the Iron and Steel Federation that they have made a grant of £200 per annum to enable the work to be advanced, while a further grant of £100 has been made from the Carnegie Research Fund through the Iron and Steel Institute. These grants have made it possible for the Department to appoint a research assistant who will give his sole attention to this work.

Chemical Engineering Congress

ARRANGEMENTS are well advanced for the Chemical Engineering Congress of the World Power Conference which is to be held in London from June 22 to June 27 of this year; and as indicating the importance of this Conference to the Gas Industry we give in this issue of the "JOURNAL" an extract from the provisional list of Papers which has just been published. An impressive variety of interest is provided for the common good. We may mention, for instance, that the U.S.S.R. has come forward with a contribution on the underground gasification of coal, and that both Germany and Austria are to discuss detoxification of town gas. Benzole recovery is to be dealt with by both Germany and Great Britain, while a Paper with a most intriguing title is to be presented by Switzerland: "The present position of new physico-chemical processes employed in the Swiss Gas Industry." Low-temperature carbonization, as was to be expected, is the subject of more than one Paper; Germany and Hungary are to discuss the production of town gas from lignite; and we look forward to Great Britain's contribution on the development of chemical engineering in the Gas Industry, which, of course, in its plant and processes owes much to "chemical engineering." The programme is, in brief, an excellent one

A Conference such as is to be staged next June is valuable in that it results in the dissemination of a great deal of information carrying the stamp of authenticity and responsibility. Its value does not end there, however. Even more important, it provides opportunity for workers in the same fields but in different countries to make contact in a common cause. Moreover, mutual understanding between chemist and engineer are essential to the prosperity of gas and its allied products, and for this reason it is gratifying that our Industry is to play a proper part in the Chemical Engineering Congress. We have already announced in the "JOURNAL" that the Chairman of the Organizing Committee is Sir David Milne-Watson and the Vice-Chairman Dr. E. W. Smith, and the Industry is strongly represented on the Technical Committee. The General Secretary of the Congress is Mr. M. W. Burt, Secretary of the Society of British Gas Industries.

Growing Exports

FOR quite a time after experts had begun to assure us that the business of the country had turned the corner away from deep depression, and was once more upon the upward path, many people were to be heard declaring that they could discover no change for the better. After so long a period in the depths, the first stages of an improvement were almost bound to be difficult to discern, but more recently the movement has gained momentum, and the signs of it stand revealed for all to see.

One of the most important of these signs is to be found in the export figures, which continue to be of a most encouraging nature. The trend of the first eleven months of 1935 was maintained in December, the result being that the exports for the whole year were the highest recorded since 1930. As compared with 1934, the total exports were up by no less than £34,000,000. The biggest gain is shown by machinery, which item is up over £5,500,000, but there are substantial gains nearly all through the list. Coal exports fell, though not to a very great extent; the year's total being 38,714,134 tons, value £31,558,566, which compares with 39,659,880 tons, the value of which was about £300,000 more in 1934. Nearly one-half of the total falling off in coal exports occurred in December, and was, of course, attributable to the disastrous state of affairs between Italy and the League of Nations. Exports of British coal to Italy during the last month of 1935 amounted to no more than 19,098 tons, valued at £14,001, which figures compare with 420,373 tons, of a value of £349,073, in the same month of 1934.

The Board of Trade statistics, taken as a whole, seem sufficient to justify the assumption that the commercial barometer of the country stands at "Set Fair." Even this, with the possibilities around us, cannot altogether free our minds of fear lest a "deep depression" should suddenly approach from one quarter or another; but, in the absence of any such "disturbance," the figures we have just quoted, coupled with last week's arrival of a really cold spell, should be potent in cheering the frame of mind of all who are associated with the Gas Industry.

Strange Electrical Opposition

LEST its significance to the Gas Industry be missed, we call special attention to a report in this issue of the Board of Trade Enquiry into an application by the Winsford Urban District Council for an extension of limits of gas supply. So far as we are aware, there has been no opposition for 25 years of a nature similar to that offered on this occasion by the Mid-Cheshire Electricity Supply Company, Ltd., and this is the first time the Board of Trade have been asked to consider such opposition.

The application of the Urban District Council as far as the extensions are concerned falls into two sections. The first relates to the extension consequential upon an extension of the Urban District boundary, and for which an immediate gas supply was promised. The second relates to a more sparsely populated area outside the extended limits of the Urban Council in respect of which a supply would not be immediately forthcoming. The Council, however, promised a supply at a differential of 6d. per 1,000 cu.ft. as soon as such a supply at that price becomes economic. The Electricity Supply Company opposed both extensions in the original Objections, but at the Inquiry they withdrew the opposition in respect to the extended Urban District, while maintaining it in respect of the Rural Parishes. They made no secret of the grounds of their opposition. They stated that a supply of gas would cut into their business where they were already established, and consequently reduce the margin of profit, which would make them more cautious in extending into undeveloped areas. In short, they asked for protection against competition.

The decision of the Board in this case will be awaited with the keenest interest, because it is obvious that if it is seen fit to recognize the claim of the electricity suppliers to the extent of refusing extensions to the gas area, then an entirely new political question will be raised. On two occasions Parliament was asked by electricity undertakers to limit or debar the operation of gas undertakings. In one case the petition was withdrawn, and in the other case Parliament would not listen to the objectors. The Gas Industry has never opposed the extension of electricity undertakings on the ground of competition or on the ground of the two commodities being unable to make a living in any one area. If, however, the Winsford opposition is sound, then the Gas Industry has lost many opportunities of protecting its interests, and will have to look seriously to its policy in this respect in the future. The Winsford Council did not object to the granting of powers in their Urban District to the Mid-Cheshire Company.

If this opposition is successful, it would appear that in

future every interested gas undertaking should oppose every proposed extension of an electricity undertaking, and the whole question of the limitation of areas in country districts as between gas and electricity would have to be considered between the respective interests. Both industries are out to serve the public, and it would seem that the public would be the loser by any such proposal as outlined by the Mid-Cheshire Electricity Company.

W.G.C. Developments

News continues to come in steadily from all parts of the country concerning the growing activities of the Women's Gas Council. Many of the larger centres—and not a few of the smaller ones, too—have already inaugurated local branches, while many more have them under consideration. That in so short a time the idea has been followed up with such enthusiasm speaks volumes not only for the foresight and enterprise of those originally responsible for the scheme, but equally for the energy of those upon whom devolves the harder business of bringing local branches into being.

It is no easy task to found a new women's organization in districts where probably half a dozen similar bodies already exist in one connection or another—women's institutes, mothers' unions, town guilds, political committees, and so forth. The choice of officers and committees calls for supreme tact and an intimate knowledge of the districts involved. It is of paramount importance than an organization of this nature should run smoothly —with no "back-biting" or petty jealousies. Otherwise its whole object will be defeated before it is well launched. For this reason it is often a wise course—and one which has evidently been fairly generally appreciated —for the hon. secretary of the branch to be a lady on the gas undertaking's staff—for example, the chief lady demonstrator or cookery expert. Valuable help and advice in connection with the formation of local branches is, of course, given by Headquarters, where Miss Halpin is always ready to assist in the inauguration. Having formed a branch, however, it is essential that it be kept up to scratch. There is a very real danger of a branch, without progressive direction, losing interest after a few meetings; its enthusiasm is liable to flag, and there may well be a tendency for it to fade away into useless stagnation.

Thus, it cannot be too strongly emphasized that the hon. secretary, upon whose shoulders falls the brunt of the organization work, must be capable and enterprising, with a thorough insight into the operations of the Industry of which the branch forms a part. She must be capable of arranging suitable programmes, demonstrations, lectures, and visits for the members, and enthusiasm must not be allowed to waver. In fact, the local branch of the W.G.C. must be created and maintained as a real live and enterprising organization in its district, and one in which every housewife can be interested and from which she can at any time obtain useful advice.

Reference having been made to the advisability of the gas undertaking's lady demonstrator being closely associated with the activities of such branches, it is of interest to note that the Battersea Polytechnic, in London, are beginning classes for gas cookery demonstrators. This new course has been instituted in co-operation with the Women's Gas Council, and a lady demonstrator of the Gas Light and Coke Company has been appointed as lecturer in this subject. The course will include lessons in the use and construction of various domestic gas appliances as well as providing an opportunity for instruction and practice in demonstrating. Such a step will be welcomed among those who aspire to proficiency in this line, and it might well be copied in other centres. Few will gainsay that the lady demonstrator, home service adviser, cookery expert—call her what we will—is in these days a valuable, almost essential, member of every gas undertaking's sales staff. Hers is a highly specialized profession, calling for a long and expensive training; and in order to obtain the right applicants for such posts, there is no need for us to emphasize again that adequate remuneration must be offered. The Industry has only comparatively recently realized that skilled salesmen are worthy of definite status and good remuneration. The same applies in no less degree to the lady demonstrator, and her presence on the staff of a gas undertaking—especially now that local branches of the W.G.C. are under consideration—is more than ever necessary.

Sir Francis Goodenough

On another page of this issue will be found a reference to the fact that the British Commercial Gas Association is celebrating its Silver Jubilee this year, and that, having acted as its Executive Chairman for the whole 25 years of its existence, Sir Francis Goodenough intends to relinquish the work and responsibilities of that office as from Dec. 31.

It will perhaps be more appropriate to refer in detail to the untiring service which Sir Francis has rendered when his retirement becomes an accomplished fact. Nevertheless, it will be difficult to refrain, even on the occasion of this preliminary announcement, from an expression of sincere regret. The British Commercial Gas Association—the first co-operative propaganda effort by any Industry in this country—long since won the admiration of those in other spheres of commerce who have not succeeded in pulling together so smoothly; its successes have been the envy of those whose imitative efforts have brought them less gratifying results. And the Gas Industry will not readily forget what it owes to the dynamic energy and driving force in the very early days a quarter of a century ago of Mr. Goodenough, as he then was, or to the steady guidance with which he has ever since directed the work of the Executive Council.

Perhaps not the least valuable feature of Sir Francis' work for the Gas Industry has been the fact that, in an extraordinarily energetic career, his activities have extended far beyond the confined circle of the Industry's own affairs. He is, in fact, what is sometimes known as a "public man," as witness his Chairmanship of the Government Committee on Education for Salesmanship, and more recently Membership of the Post Office Advisory Council appointed early in 1933 by the Postmaster-General. These are two only from among a host of honorary appointments, of what might be called a national character, which Sir Francis has held, and the advantage to any industry of having one of its leaders honoured in this way cannot be gainsaid. But apart from this, it has brought to the Gas Industry—which has always had a tendency towards a rather parochial outlook—the benefit of a knowledge of thought and trend from a wider world.

It is gratifying to know that Sir Francis' impending retirement is in no way connected with the recent threat to his health from which—we have ample personal assurance—he has happily made a splendid recovery. But, after his 25 years' continuous and untiring service to the B.C.G.A., the Industry will not grudge him a well-earned rest. Knowing Sir Francis as we do, we are equally certain that retirement will not mean for him a life of idleness, and that his ripe experience and his enthusiasm will be at the disposal, in many other ways, of the Industry in which his heart will always be.

PERSONAL

In reference to the lamented death of Mr. Rudyard Kipling, it is of interest to note that Sir FRANCIS GOODENOUGH is a Vice-President and Member of the Council of the Kipling Society, and only as recently as Dec. 18 last gave an Address to the Society on "The Humour of Kipling," which was a sequel to a previous Address he gave on "A Business Man's Debt to Kipling."

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We learn from a local correspondent that Mr. W. A. CURRIE, of the Technical Staff of Glasgow Corporation Gas Department, was appointed Assistant Gas Manager and Lighting Inspector to the Renfrew Corporation on Jan. 13 at a meeting of the Town Council.

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Mr. ERIC SHIELL, Engineer and Manager of the Langholm Gas Company, Dumfriesshire, and last year's President of the Waverley Association of Gas Managers, has been appointed Engineer and Manager of the Thurso and North of Scotland Gas Corporation, Ltd.

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We learn from a local correspondent that Mr. WILLIAM TOMLIN, J.P., of Birchington, has been elected Chairman of the Isle of Thanet Gas Light and Coke Company in succession to Mr. Walter Hills, whose death was announced in our columns on Jan. 8.

Mr. Tomlin, who has been a Director of the Company for twenty-five years and Deputy-Chairman for eighteen years, is well-known for his public work in the district, being a Justice of the Peace for the Cinque Ports Area.

Mr. WILLIAM BOOTH REEVE, J.P., succeeds Mr. Tomlin as Deputy-Chairman. Mr. Reeve, who has been a Director for twenty-one years and was Auditor in 1913, is among the best-known public personalities in Margate, being for many years a Justice of the Peace both for Margate Borough and for the Cinque Ports. He held the position of Mayor of Margate during the critical years of the war. In recognition of his services during the war years, Mr. Reeve was honoured by being made a Member of the British Empire. Margate paid him the highest tribute possible by electing him as first Freeman of the Borough.

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On the occasion of their Silver Wedding, Mr. WILLIAM YOUNG, Manager of the Stranraer Gas Company, and Mrs. Young were the recipients of a suitably inscribed gift from the staff and employees of the Company.

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On retiring after 43 years' service, Mr. T. DAVIS, Distribution Superintendent of the Burnley Gas Department, received suitable mementoes from the office staff and the works employees.

Obituary

The death has taken place at Spennymoor of Mr. RALPH CLAUGHAN, Chairman of Spennymoor and Tudhoe Gas Company, and a Director of Durham City Gas Company. Among those who attended the funeral were Mr. T. Raine, Vice-Chairman, Mr. H. C. Ferens and Mr. R. G. Fleming, Directors, representing the Spennymoor and Tudhoe Gas Company, Mr. H. Forest, Secretary and Manager, and staff and workmen of the Company; Mr. T. W. Holiday, Director, representing Durham City Gas Company; Mr. J. H. Armoury, representing Bishop Auckland Gas Company; and Mr. C. Stott, representing Tudhoe and Sunderland Bridge Gas Company.

CORRESPONDENCE

Statements of Production

SIR,—I have read your interesting notes on Wireless Propaganda, and I think it is high time the Gas Industry got away from the old idea of stating production of gas in millions of cubic feet.

For instance, the increase in gas output at Chesterfield for the year ended March 31, 1935, was 62 (this doesn't look much) millions of cubic feet, equal to 8,722,157 B.o.T. units of electricity, or, in other words, equal to half the total output, in heat units, of the Corporation Electricity Department, for the same period.

Yours, &c.,
H. DAVIES,
Engineer and Manager.

Chesterfield Gas Department,
Jan. 17, 1936.

The British Industries Dinner Ball

SIR,—It occurs to me that among the readers of the "GAS JOURNAL" there may be many exhibitors at next month's British Industries Fair who would welcome the opportunity of entertaining the more important buyer friends in a fashion which I feel sure would be very warmly appreciated.

The setting is Grosvenor House. The hostesses are a group of Society women (among them the Marchioness of Londonderry, Lady Vansittart, and Lady Diana Duff Cooper) who are giving up much time to preparing a greeting for these envoys from overseas. The occasion is a dinner and ball, with a cabaret under the direction of Sir Oswald Stoll and a delightful interlude during which a number of the hostesses, attended by their Maids of Honour, will distribute appropriate gifts received from exhibitors at Olympia, White City, and Castle Bromwich (not to mention a film showing the handing over of these presents within the Fair).

The event has been arranged for the second Tuesday of the Fair (Feb. 25) and tickets for the complete entertainment (with champagne) are only two guineas each, with a free ticket for every five bought. Great Britain is renowned abroad for her hospitality, and I am sure that in no foreign city where fairs are held could so delightful an evening be possible as a gesture from exhibitor to buyer. I shall be happy to send tickets to anyone from 6A, Blomfield Road, W. 9.

Yours, &c.,
ADELINE BOURNE,
Organizer.

The British Industries Dinner Ball,
6a, Blomfield Road, W. 9,
Jan. 18, 1936.

An Appeal

SIR,—After reading the diatribes against Coalowners and the Coal Trade generally in recent issues I came across the pathetic case of Mr. Drohan's widow and eight children, and I trust that your many readers who are touched, as I was, by Mr. Drohan's bravery and its sad sequel (and who may not yet have done so), will send their contributions to Mr. G. Airth at the address given—namely, Gas-Works, Dundalk, N. Ireland.

Yours, &c.,
A COALOWNER.

Jan. 18, 1936.

News in Brief

Applications are Invited for the position of Engineer to control the distribution work of the Preston Gas Company at a salary of £500 per annum.

A Visit to the Wellington Tube Works at Tipton will be paid by the members of the Birmingham University Metallurgical Society on Jan. 29.

To Meet the Increased Cost of Coal the Stafford Council last week adopted a proposal that the Gas Department's contributions to the relief of rates be reduced from £2,000 to £1,500.

A Contract for £20,000 from the Wigan Corporation for the erection of a new gasholder has been placed with R. & J. Dempster, Ltd., of Manchester, in competition from ten other firms. They will also dismantle the existing gasholder.

"**So You Won't Talk**" was, appropriately enough, the title of a film on at the Picture House, Buxton, when the town's electricity supply failed last week, and plunged cinemas, hospital, theatres, and hotels into darkness for several hours!

Included in the Rent of what are thought to be the cheapest houses in the country, now being erected by the Filey Town Council, is the use of a gas oven and gas boiler. The houses cost under £300 and each will be let for five shillings per week.

An Increase of two million cu.ft. over the corresponding month of last year to 21 million cu.ft. in the output for December last has been recorded in Dumbarton. For Dec. 24 the record figure of 827,000 cu.ft. was established, the previous best being on Dec. 25, 1929, when 712,000 cu.ft. were sent out.

From San Diego we have received a copy of the *News Meter*, which is published in the interests of its employees by the San Diego Consolidated Gas and Electric Company. The matter contained in the house organ makes absorbing reading for all and is supplemented by many humorous sketches.

The 16-Million Mark was passed for the first time in December at Buckhaven, when the monthly output reported by Mr. H. A. Aitken, Engineer and Manager, Buckhaven and Leven Gas Commissioners, amounted to 16,142,000 cu.ft., or 803,000 cu.ft. more than the corresponding month of last year.

A Gas Service Depot is to be erected at Bonnybridge by the Denny and Dunipace Gas Department, and at a meeting of the Town Council last week it was agreed that Bailie Sawers, Gas Convener, and Mr. R. M. Simpson, Engineer and Manager, should make enquiries regarding a suitable site for the premises.

The Issue by Tender of £10,000 4½% Preference Stock of the Stourport Gas Company made on Jan. 14 was oversubscribed. The minimum tender accepted was £5 0s. 3·6d. for each £5 of Stock. The maximum tender was £5 5s., and the average figure of the accepted tenders was £5 0s. 7·78d. for each £5 of Stock.

Mr. H. Hopkinson, Secretary of the Chester United Gas Company, gave an Address on "The Service of Gas" to the Chester Rotary Club on Jan. 13. Chester was the first provincial gas undertaking to follow the lead of the South Metropolitan Gas Company in 1902 in the institution of a profit-sharing scheme. The scheme was revised in 1922 and over 120 of the employees were stockholders. They started with 65 members of the scheme but to-day there were now 150.

The Potato Marketing Board are staging a series of cookery demonstrations at some of the public exhibitions for housewives which are being held in different parts of the country. Gas will be used on the stand for cooking, water heating, as well as refrigeration. A feature of the demonstration kitchen will be a broken white "Calthorpe" cooker with chromium fittings supplied by the Parkinson Stove Company, Ltd. The towns to be visited include Brighton, Birmingham, Manchester, and London.

Full Particulars of the recent successful issues by the Dudley, Brierley Hill, and District Gas Company show that the £33,000 4% redeemable debenture stock, 1950-1960, was covered between four and five times, although the list was closed five minutes after it was opened. The Directors allotted all applicants up to and including £300 per application in full, and the remainder *pro rata*. The issue by tender of £17,000 5% consolidated preference stock was covered between six and seven times, at prices ranging from £125 down to the minimum of £110 per £100 of stock. Tenders at £115 1s. received partial allotment, the average price realized being £118 17s. 9d.

Satisfaction was Expressed at a meeting of the Hampton-in-Arden Council last week, when a letter was read from the Secretary of the Solihull Gas Company with reference to the supply of gas to the district. The letter stated that it was hoped the Company would be in a position to supply the needs of Hampton residents in the near future, and the price fixed by the Board of Trade would be the same as for the people of Solihull—viz.: 9·8d. a therm, equivalent to 4s. 1d. per 1,000 cu.ft.

The Midland Gas Industry Supper Dance will be held at the Grosvenor Rooms, Grand Hotel, Birmingham—on Thursday, Feb. 20, during the first week of the British Industries Fair. Since a number of persons connected with the Industry will be engaged at the Fair until approximately 6 p.m., it has been decided this year to dispense with the dinner, and dancing will begin at 7.30 p.m. Tickets can be obtained from Mr. S. J. Sadler, Joint Hon. Secretary, Gas-Works, Solihull, Birmingham.

"**Next to the Water Supply**, an adequate gas service is essential to the civic and industrial expansion of every community" runs an article by the Guyer Press Association on the year's work of the Leamington Priors Gas Company in the annual business review of the *Leamington Courier* for Jan. 17. Having pointed to the threefold programme of the Gas Industry—viz., to secure shorter working hours for the woman in the home; to provide healthier and better living conditions for all; and to aid in the revival of British industry, the article concludes by saying that the Leamington Company has before it an increasing sphere of usefulness in helping to secure these aims.

A Portrait of ex-Provost Simpson, Chairman of the Company, was unveiled in the Board Room at the first meeting of Bo'ness Gas Light Company, Ltd., for 1936, held on Jan. 9. The ceremony was performed by Mr. John Sneddon, Senior Director. Replying to the toast of "The Officials of the Company," Mr. R. Taylor, Secretary and Collector, said that during the twenty-five years that he had been in the service of the Company, despite the competition from electricity, the increase in the make of gas was 16½ million cu.ft., the total yearly make now exceeding 45 million cu.ft. Mr. A. D. King, Engineer and Manager, whose name was associated with the toast, also spoke.

Forthcoming Engagements

Jan.

23.—B.C.G.A.—Midland District Meeting at Birmingham.

24.—London and Southern Junior Association.—Meeting. Paper by Mr. T. A. Wolfe.

25.—Wales and Monmouthshire Junior Association.—Meeting. Paper by Mr. C. F. Petersen.

28.—Southern Association (Eastern District).—Meeting at 28, Grosvenor Gardens, S.W. 1, at 2.30 p.m.

28.—B.C.G.A.—Manchester District Meeting at Manchester.

29.—B.C.G.A.—Yorkshire District Meeting at Leeds.

30.—B.C.G.A.—Eastern District Meeting at Cambridge.

31.—I.G.E.—Liquor Effluents and Ammonia Committee, 11.15 a.m.; Joint Research Committee, 2.30 p.m.

31.—B.C.G.A.—South-Western District Meeting at Exeter.

Feb.

6.—Midland Junior Association.—Meeting. Paper by Mr. G. C. Pearson.

8.—Manchester and District Junior Association.—Meeting at Darwen. Paper by Mr. J. A. Derbyshire.

8.—Scottish Western Junior Association.—Meeting.

14.—London and Southern Junior Association.—Meeting. Paper by Dr. F. J. Dent.

15.—Scottish Western Junior Association.—Annual Social.

15.—Scottish Eastern Junior Association.—Meeting at Perth.

15.—Yorkshire Junior Association.—Short Paper Meeting at Bradford.

20.—Joint Junior Associations.—Visit to B.I.F., Birmingham.

22.—Scottish Western Junior Association.—Meeting at Kingshill Colliery.

22.—Western Junior Association.—Meeting at Yeovil. Paper by Mr. T. W. Clapham.

The Women's Gas Council

Training of Demonstrators

Students taking a Domestic Science or Cookery Course at the Domestic Science Department of the Battersea Polytechnic will in future have an opportunity of acquiring a knowledge of gas cookery demonstration work.

The Battersea Polytechnic in co-operation with the Women's Gas Council have this term instituted this extra course, and Miss Godfrey (of the Gas Light and Coke Company) has, on the recommendation of the Women's Gas Council, been appointed as lecturer in this subject.

The course will include lessons in the use and construction of cookers, laundry appliances, gas refrigerators, &c., as well as providing an opportunity for instruction and practice in demonstrating.

The classes, which take place on Tuesday evenings from 6.30 p.m. to 8.30 p.m., are for this term to be confined to students already taking a course in the Domestic Science Department of the Battersea Polytechnic; but it is hoped that next term they can be made available to non-students who may have already completed their domestic science training but who would welcome an opportunity of gaining some knowledge of demonstrating.

Camberwell Street Lighting

Socialist Majority Vote for Electricity

The Camberwell Borough Council at its meeting last week accepted, by 35 votes to 27, the recommendation of its Works Committee that a fifteen-year contract should be entered into with the County of London Electric Supply Company for the lighting of the whole of the borough, at an annual cost of £23,550.

The length of streets in the borough amounts to 140 miles, all of which, except eight miles, are now lighted by the South Metropolitan Gas Company. Last year both that Company and the electricity company were invited to submit tenders; and, in view of the capital cost, suggested a contract of fifteen years. It so happened that on the very day when the tenders were due for presentation and were presented, the Interim Report of the Departmental Committee on Street Lighting appeared, among the observations of which was one to the effect that at the moment there was no code of lighting that the Committee would care to recommend for universal adoption. Lighting engineers had, it is true, been able to gather an idea of the direction in which the Committee was moving, and to a large extent could anticipate its more positive recommendations and take account of them in any tender. But, after all, the Report was only an *Interim* Report, and in all the circumstances the South Metropolitan Company felt that borough councils might well be reluctant to enter into long term commitments until the Final Report had appeared. In December the Gas Company therefore submitted an offer which would have given the Camberwell Borough Council an opportunity of using the interval for a full demonstration of the kind of lighting which the Company wished to install.

The offer was that the Company, entirely at its own cost, would install a new system of lighting throughout the borough, to be completed by the end of September. Thus the Borough Council would have had the opportunity of judging its merits throughout next winter, without any obligation whatever of continuing it if it did not commend itself to the Councillors. The installation was designed to embody the latest developments in high and low power gas lighting and to meet the anticipated as well as the present needs of traffic. The criterion by which the Company asked to be judged was the illumination of the road as a whole, and not the so-called test point illumination of the British Standards Institution Specification, against which the Company had consistently protested.

In spite of this offer, upon which no vote was taken at last week's meeting, the Socialist majority of the Borough Council decided to accept the Electricity Company's tender and to enter into a fifteen years' contract with it.

A Novel Gas Company Meeting

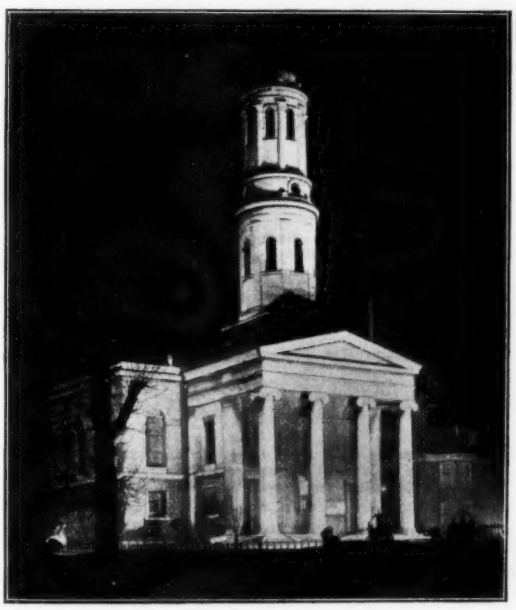
Shareholders Assemble in the Retort House

We are indebted to Mr. B. B. Waller for the following excellent story, which is taken from a letter, dated Nov. 13 last, written to him by Mr. W. H. Shedden, Engineer and Manager of the South Brisbane Gas and Light Company, Ltd., of Queensland:

"The actual functions in regard to our Jubilee passed off very satisfactorily. We held the Annual Meeting in the retort house at the works, and over 110 shareholders attended. The building was decorated with flags, palms, and flowers, and looked quite well. I think it was unique that we were able to hold this meeting alongside the carbonizing plant while it was in full operation, and it appeared to intrigue many of those in attendance. The ladies turned up in all their finery in spite of the fact that they had to sit down for an hour or more in the heart of the plant, and I am pleased to inform you that the meeting went off very successfully and without anyone having to complain about injury to their clothing.

"Following this meeting we entertained the shareholders and a number of guests at afternoon tea on the lawn at the other end of the works. This also was a great success; the Hon. the Minister for Works who administers the Queensland Gas Act was in attendance, as also was the Lord Mayor and a number of prominent citizens. We had almost 200 at this function and it proved a great success. The works, of course, was made to look its best, and we had taken the opportunity of decorating it with some hundreds of flags. I think it is the consensus of opinion that the Jubilee passed off very well, and I really think it was well worth while."

Church Floodlighted by Gas



Excellent effects were obtained, as will be seen from our photograph, by the floodlighting of St. Ann's Church, Wandsworth, over Christmas and the New Year by the Wandsworth and District Gas Company.

Gas Replaces Electricity for Railway Point Snow Melting

The *American Gas Journal* reports that the authorities of the Long Island Railway have lately given out contracts for over 1,500 gas-fired heaters for use in keeping railway points in the vicinity of the station at Jamaica, Long Island, free of snow and ice and so allow the railway service to be maintained even in the most inclement weather.

The order is said to be the result of a prolonged series of tests which has shown gas-fired heaters to be better adapted to the purpose than the electric heaters hitherto used and which are now to be superseded. Although employed on many other American railways for snow and ice melting in connection with rail points, this is the first time they have been used on the Long Island system. The heaters are to be brought into use whenever snow begins to fall or when driving sleet is experienced, and it is estimated that the heaters will consume an annual total of about 13 million cu.ft.

Chemical Engineering Congress

This Conference will be held at the Central Hall, Westminster, from June 22 to June 27 this year, and as indicating the importance of the Conference to the Gas Industry we give the following extract from the provisional list of Papers which has just been published:

"Refractories for use in the carbonizing industries" (Great Britain). Authoritative Body: Joint Refractories Research Committee, Institution of Gas Engineers. Author: A. T. Green.

"Economic detoxification of town gas" (Austria). Authoritative Body: Austrian National Committee, World Power Conference. Author: Rudolf Doczekal.

"The designing of gas-works with reference to the production of benzole" (Germany). Authoritative Body: Deutscher Verein von Gas- und Wasserfachmännern. Author: Plenz.

"Engineering problems connected with the removal of carbon monoxide from town gas" (Germany). Authoritative Body: Deutscher Verein von Gas- und Wasserfachmännern. Author: Mezger.

"The production and treatment of coal tar" (Great Britain). Authoritative Body: Institution of Gas Engineers. Authors: W. E. Cone, W. J. Chadder.

"Benzole recovery from coal gas" (Great Britain). Authoritative Body: Institution of Gas Engineers. Authors: G. J. W. Anderson, W. G. Adam.

"Wet purification of coke oven gas" (Holland). Authoritative Body: Vereeniging voor Congressen op Electrotechnisch en Aanverwant Gebied. Author: H. A. J. Pieters.

"Tar production processes and their application to the brown coal industry" (Austria). Authoritative Body: Austrian National Committee, World Power Conference. Author: Hans Löffler.

"Town gas from lignite" (Germany). Authoritative Body: Deutscher Braunkohlen-Industrie Verein, und Deutscher Verein von Gas- und Wasserfachmännern. Author: Allner.

"Low-temperature coal carbonization" (Germany). Authoritative Body Deutsche Gesellschaft für Mineralölforschung. Author: F. Müller.

"The development of chemical engineering in the gas industry" (Great Britain). Authoritative Body: Institution of Gas Engineers. Author: T. Campbell Finlayson.

"Town gas from brown coal, lignite, or other recent coals" (Hungary). Authoritative Body: Department of Chemical Technology, Royal Hungarian University for Technical and Economic Sciences. Author: J. Györki.

"Recent development of low-temperature carbonization in Japan" (Japan). Authoritative Body: Fuel Research Institute. Author: Yoshisada Ban.

"Correlation between coal analysis, semi-scale, and industrial carbonization" (Sweden). Authoritative Body: Swedish National Committee, World Power Conference. Author: S. Qvarfort.

"Underground gasification of coals" (U.S.S.R.). Authoritative Body: Podzemgas.

"Disposal of industrial effluents" (Great Britain). Authoritative Body: British National Committee, World Power Conference. Author: H. T. Calvert.

"Disposal of gaseous effluents" (Great Britain). Authoritative Body: Institution of Chemical Engineers, and Chemical Engineering Group, Society of Chemical Industry. Authors: W. A. Damon, Birkett Wylam.

"The development of an intermediate scale plant for high-pressure hydrogenation of tar and tar distillates" (Great Britain). Authoritative Body: British National Committee, World Power Conference. Authors: G. Fraser Shaw, J. G. King.

"Education and training in the gas industry" (Great Britain). Authoritative Body: Institution of Gas Engineers. Author: C. H. Creasey.

"The present position of new physico-chemical processes employed in the Swiss gas industry" (Switzerland). Authoritative Body: Swiss National Committee, World Power Conference. Author: Schläpfer.

Stirling Supplies Bridge of Allan

Bulk Supply Inaugurated

The transference of the Gas Undertaking of the Burgh of Bridge of Allan to the Stirling Gas Light Company, who will henceforth supply the area hitherto covered by the municipal undertaking, took place on Jan. 15. During the twenty years in which the gas-works have been municipally-owned the plant failed to do credit to the energy expended in its operation, and, although a gas contingent rate had been in force for some time, it was found impossible to prevent recurring deficits. Some months ago the Town Council appointed Sir David Allan Hay and Mr. J. W. Napier, of Alloa, to go into the matter and advise them. On their recommendation they decided to dispose of the Undertaking to the Stirling Company, who will supply the district from their own well-equipped works by means of a 12-in. main which has been laid down along the railway side.

Last Wednesday, in the presence of the Directors of the Stirling Company and members of Bridge of Allan Town Council, Mr. James F. Millar, interim Chairman of Directors, turned on the Stirling supply at the Bridge of Allan Works, and the company afterwards assembled at luncheon in the Allan Water and Spa Hotel.

Mr. Millar took the opportunity to refer to the development of the Stirling Gas-Works and added that they had been practically rebuilt during the past fifteen years. New offices and showrooms had been added and by means of a blue water gas auxiliary plant they could face a coal strike with considerable confidence. They, of course, wanted no strike, and had fallen in with the Industry generally by agreeing to pay an additional shilling per ton for coal. Last year their make of gas was 280 million cu.ft., while in each of three days in December their output exceeded one million. With regard to Bridge of Allan, it was their determination to develop the area and to give the customers the very best of attention. The Chairman added that that day was rather a remarkable one in their history, as they had taken into their service that morning their new Manager, Mr. A. Cuthbert, from Grangemouth, to whom he gave a hearty welcome. Mr. Millar concluded by handing over to Provost Campbell, of Bridge of Allan, a cheque in payment of the Undertaking.

Provost Campbell, having handed over a receipt, expressed the good wishes of the Town Council and community of Bridge of Allan to the Stirling Gas Light Company and wished them all success. He referred to Sir David Allan Hay's opinion after a thorough examination of the position, that there was no alternative which would be likely to offer anything like the advantages which might be obtained by disposing of the Undertaking to the Stirling Company. There would be a reduction in price from 6s. 8d. to a little over 4s., and they would avoid the piling up of an annual loss, which in the last year of audited accounts amounted to £471. The annual saving, it was calculated, would not be less than £1,700 per annum. He ventured to prophesy a great increase in the consumption of gas at the lower price.

Mr. Frank Richardson, a Director of Stirling Gas Light Company, spoke of the amicable manner in which the settlement had been carried through, and paid tribute to the work of Sir David Allan Hay and Mr. Napier.

Mr. Napier congratulated both parties on the settlement just concluded. The trend in the Industry, he said, was towards consolidation. A local authority must follow the dictates of economics, and Bridge of Allan could be congratulated on having come to terms with its big neighbour. Obviously it would have been quite wrong to continue in the face of a heavy capital debt and such a high price of gas. There was, he could assure them, a great future for gas; it was one of the safest and best investments, as was proved by the increased consumption both in this country and in America.

The company included, in addition to the gentlemen mentioned, Provost M'Allister, of Stirling; Bailie Menzies, Bailie Gourlay, Mr. James Harris, Mr. John Walls, and Mr. W. M. Rodgers, Directors of the Stirling Company; Mr. James C. Muirhead, Secretary to the Company; Mr. Cuthbert, Manager, and Mr. Gledhill, Assistant Manager; Mr. H. C. Chantry, Sales Manager; Mr. John D. Steel, Auditor; Mr. John Ross, Glasgow; Mr. J. Cuthbert; Bailie Pullar, Councillors Suttie, Stirling, Thomson, and Miss Bain, Bridge of Allan; Mr. Mitchell, Town Clerk; and Mr. John Muirhead.

Oxy-Coal Gas Cutting and Profiling

A Comprehensive Handbook

A comprehensive handbook on the subject of oxy-coal gas cutting and profiling has recently been issued by Messrs. Hancock & Co. (Engineers), Ltd., of Croydon, and we are indebted to them for the receipt of a copy.

During recent months this subject has provided a live topic for discussion, and, therefore, any material contribution to the available literature on the subject is exceedingly welcome. As stated in the foreword, the work has been compiled with a view to giving complete instructions for the installation and operation of Hancock oxygen cutting machines, together with hints on how to deal with various jobs and get the best out of the machines at all times. Mention is made of an intensifier for use with gas of low calorific value. The installation of an intensifier is advantageous, as by its use more efficient working of the burner is obtained. The intensifier is an apparatus for fitting in the gas supply to increase the calorific value of the gas. This is effected by passing the gas through benzene which has been gasified in a special container. The principle of operation of the apparatus is as follows: The intensifier consists of a benzene tank, a float chamber, and a vaporizing chamber. The action is to bubble the coal gas through

liquid benzene, thereby taking up a proportion of the benzene in vapour form. The percentage of vapour can be varied by altering the depth of the gas jets in the liquid. A number of jets is provided in order to increase the vaporization. The float maintains the benzene at a constant level in the vaporizing chamber.

Oxy-coal gas for welding also is dealt with at some length in the book, and it is pointed out that gas successfully welds such materials as aluminium, cast-iron, brass, copper, and similar metals with a complete absence of blow holes.

The publication goes on to detail hand and machine-operated burners, driving units, electrically-driven tracers, the Company's series of direct cutting and profiling machines, various portable models, and concludes with hints on cutting, and some examples of excellent work carried out with oxy-coal gas cutters.

Advancing Sales at Southminster

Village Company Progresses Under Live Direction

Our readers will recall the interesting survey published in these columns on Nov. 6 last of the progress and development of the gas undertaking in the little Essex village of Southminster, and the steps being taken by the new management to provide a really up-to-date gas service in a country district.

At that time we referred to the steadily increasing sales of gas—at that time 110,000 cu.ft. in a week. We have just received from Mr. R. V. E. de B. Crawshay (Managing Owner of the Southminster Company) returns relating to gas sales during the last quarter of 1935 as compared with the corresponding period of 1934, and, as will be seen, these continue to bear out the statement we previously made:

Gas Made at Southminster.

1934.		1935.	
Week Ended.	Cu.Ft.	Week Ended.	Cu.Ft.
Oct. 4	87,300	Oct. 2	91,400
,, 11	86,600	,, 9	96,800
,, 18	96,500	,, 16	107,000
,, 25	97,200	,, 23	110,900
Nov. 1	95,500	,, 30	115,700
,, 8	104,200	Nov. 6	114,700
,, 15	106,000	,, 13	117,600
,, 22	109,000	,, 20	119,900
,, 29	107,400	,, 27	114,000
Dec. 6	109,100	Dec. 4	123,500
,, 13	113,400	,, 11	122,700
,, 20	118,400	,, 18	130,200
,, 27	121,000	,, 25	141,500
	1,351,600		1,505,900

Increase over quarter 154,300

The quarter ended Sept. 25, 1935, showed a decrease of 34,000 cu.ft.

Mr. Crawshay is holding a Cookery Demonstration at the Memorial Hall on Jan. 22 with "New Herald" cookers—a model which is popular in the district—and Miss Lena Parkyn, of Hampstead, will officiate. In addition, a number of modern gas appliances will be shown.

The Southminster Gas Company had had little or no increase in business over the past four years, and Mr. Crawshay's progressive policy is already having a marked effect on the gas sales.

Refrigeration by Gas

Not a New Idea

The following interesting little note appeared in the November, 1935, issue of *Gas News*, published by the Colonial Gas Association of Melbourne:

How simple is refrigeration by gas, yet how long before the modern air-cooled gas refrigerator was evolved. As far back as 1889 a Mr. Loftus Perkins invented a contrivance for gas refrigeration which he named the "Arktos." Referring to the invention in an article entitled "Artificial Cold for Australian Summers," the *Melbourne Herald* of Oct. 19, 1889, said:

"The production of cold, says the scientific sharp, is merely the abstraction of heat from the body that is being operated upon. Precisely so! But how are you going to operate? That is the question . . ."

"Heat is applied to the ammonia reservoir and the ammonia liquid thereupon parts with its gas, which flows into the vacuum at the other end. When the source of heat is removed, the ammonia re-enters the water, producing such an intense degree of cold at the further end of the tube, which it leaves, that the moisture of the atmosphere of the room is deposited upon it in the form of dry snow. . . ."

"There you are. 'The Australian climate defied,' thanks to Mr. Loftus Perkins, to the 'Arktos,' which is the name of his invention, and to the *British Journal of Photography*, which hath ingeniously described the same. The apparatus may be made on a large scale, in which case you only want to heat up the boiler two or three hours a day. Of course, the boiler can be in one room and the refrigerator in another, the connecting tube passing through the wall. Probably the day is quite close at hand when Mrs. Young Australia will say: 'Dear me, how unpleasantly warm it is. Mary, please light the gas under the "Arktos" in the laundry to cool this room a little,' and presently will warn her hopeful who comes in red-hot from the cricket field on a blazing day, 'Jack, don't go too near the "Arktos" or you'll get a chilblain on your nose to a certainty. . . .'"

Evidently there was some weakness in the "Arktos," for it apparently never caught on. Not that we need worry much about it to-day, for we have the **modern** gas refrigerator, which gives silent, controllable refrigeration for little cost, and from the same source as we derive our cooking, water heating, and house-warming services.

A Sidelight on Psychology

"Watching for the Window Display"

We are indebted to Messrs. Bratt Colbran, Ltd., for the following interesting sidelight on psychology from their Irish Representative:

"While passing the main showrooms of the Alliance and Dublin Gas Company the other day about 4 p.m. the blind on one window was lowered, and on this was written 'Watch for the Gas Company's New Display To-morrow.' I took the trouble to go round to see this display next morning, and was surprised to see the number of people who had apparently taken the message on the blind to heart. . . ."

Athletic and Social

George Wilson Gas Meters, Ltd., Staff Social.

An exhibition of modern ballroom dancing was a greatly appreciated item at the staff dance and social of Messrs. George Wilson Gas Meters, Ltd., Coventry, which was held in the works canteen on the evening of Jan. 15. About 140 people were present. Paper hats and hooters added considerably to the gaiety, and a family spirit prevailed.

Among those who attended were the Deputy Mayor and the Deputy Mayoress (Alderman and Mrs. T. E. Friswell), Mr. J. H. Wilson (Managing Director), Mrs. Wilson and Miss D. Wilson, Mr. and Mrs. F. C. Wilson, Mr. and Mrs. W. D. Wilson, Mr. H. Clay (Manager for Messrs. W. Dickins & Co., Ltd.), Mr. D. Poole (Works Manager and Director of Messrs. George Wilson Gas Meters, Ltd.), Mr. G. Ormerod (Manager of Machine and Tool Shops), Mr. S. E. Birch, Mr. F. Spencer (of Messrs. M. H. Spencer & Co.), Mr. S. F. Snape, and Miss J. R. Sison (Director). The branch Managers present were Mr. A. C. Frost (London), Mr. J. H. Bate (Blackpool), Messrs. D. Rhoden and W. R. Gill (Leeds), Mr. A. Adams (Exeter), and Mr. D. Jacobs (Manchester).

The Serenaders Band provided the music. The artistes were Mr. Archie Hall (comedian) and Miss Norah Tee (soprano).

Prizes were won as follows: Spot prizes, Mr. J. Cooper and Mrs. C. M. Van Eugen, and Mr. F. C. Spencer and Mrs. J. H. Wilson; elimination prizes, Mr. and Mrs. A. England. The prizes were handed to the winners by Miss D. Wilson.

The arrangements for the event were made by the Social Committee, the Chairman of which was Mr. W. G. C. Ball.

LONG SERVICE TO THE GAS INDUSTRY

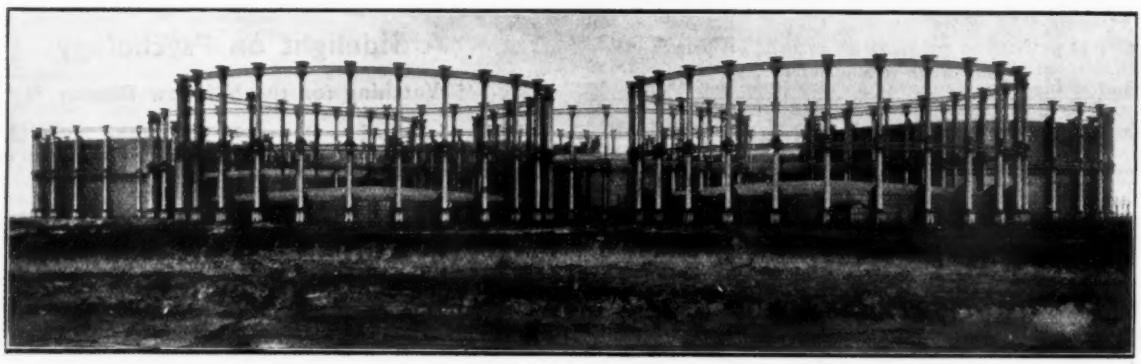
A number of firms of long standing on the contracting and manufacturing side of the Industry have collaborated with the "JOURNAL" in the production of a series of articles, under the above title.

Westwood & Wrights, Ltd.

A little over a century ago a small site was secured by the ancestors of two families of Westwood and Wright at Queen's Cross, Dudley, on which was started a small Engineering Factory, culminating in a blacksmith's shop, pattern shop, foundry, and fitting shops.

Records show that the manufacture of gasholders and other gas plant was started as far back as 1848, and as more ground was required for this class of work a new site was leased at Round Oak, Brierley Hill, which then became, and has since remained, the Headquarters of the concern.

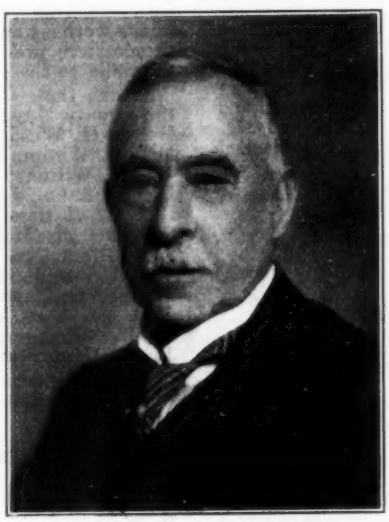
The two works are connected by the Earl of Dudley's private railway line, which serves many of the various works and collieries in the district.



Group of Nine 2-Million Capacity Gasholders, Bromley-by-Bow.

Almost from the beginning gas was used for lighting and power, carbonizing, purifying, and storage plant being erected on the works for this purpose, but both works were electrified throughout during the early days of commercial

The Late
W. H. WESTWOOD.



W. W. SKIDMORE WESTWOOD,
Present Governing Director.

The Late
E. T. WRIGHT.

electricity, and various additions of plant have from time to time been made to keep abreast of the times. Gas is now used extensively in the foundries for the drying of moulds, cores, &c.

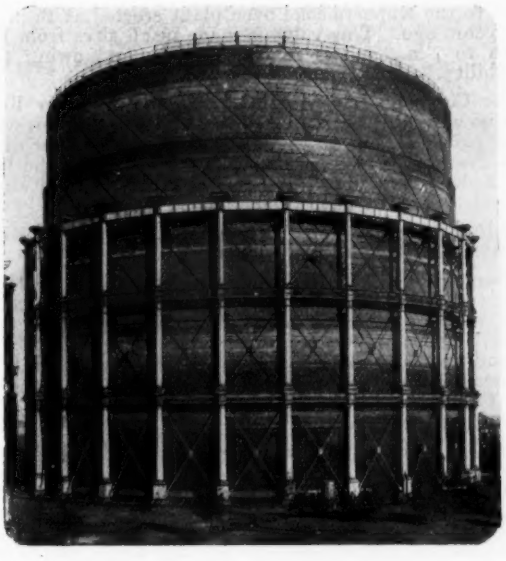
The concern was converted into a Limited Company in 1924, since when various extensions have been made to cope with increased business.

From its very inception the firm has carried out a considerable amount of pioneer work in the Gas Industry and is ranked among the earliest gasholder builders in the country.

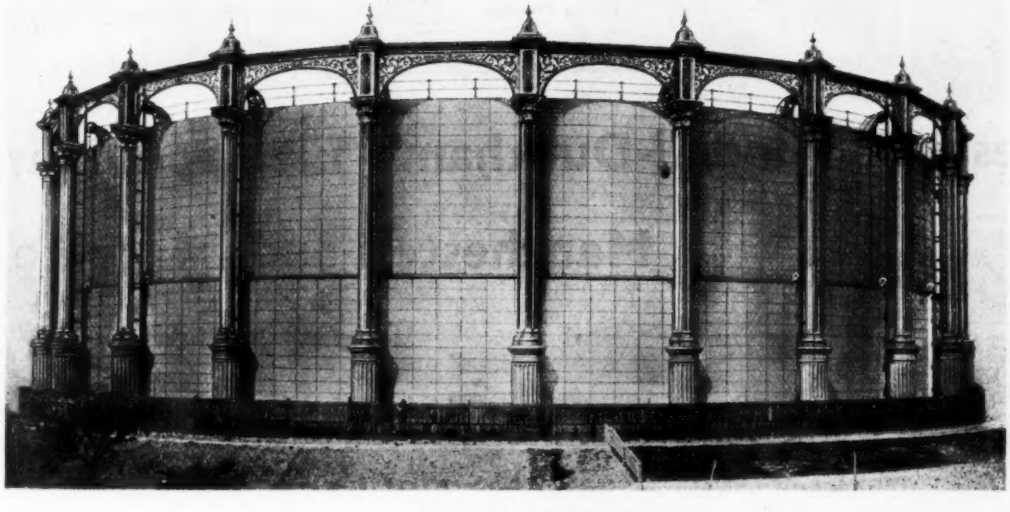
During the years 1872-1887 a group of nine gasholders, each of 2 million cu.ft. capacity, was built at Bromley-by-Bow, London, and is generally recognized as being the finest group in the world. All these are still in active service, and in 1925 and 1927 two of them were extended—from 2 to 4 million cu.ft. capacity and 2 to 5 million cu.ft. capacity, respectively, the top or "flying" lifts being on the "spiral" system, and the extended guide framing being in steel tubing, &c., camouflaged to match the existing cast-iron columns and girders.

An old photograph of this group is produced here, also an illustration of the gasholder extended from 2 to 5 million cu.ft. capacity.

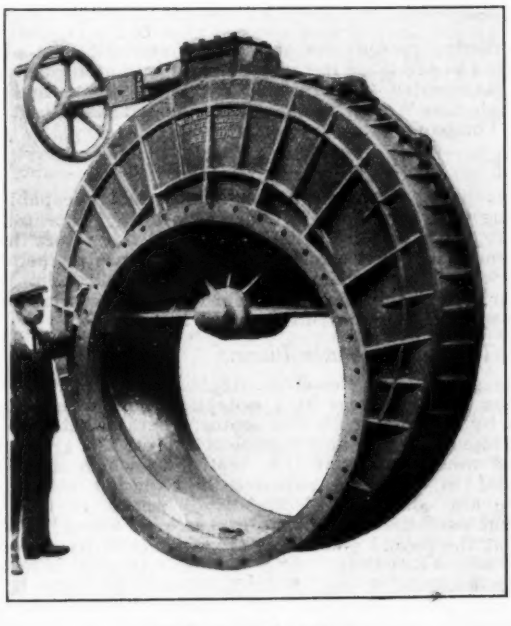
A further example of highly finished work is shown on the 192-ft. diameter gasholder built at Fulham in 1876



Reconstructed Holder at Bromley-by-Bow.



"The Sultan," Fulham.



72-In. Bore Gas Valve.

(affectionately known as "The Sultan"), and still standing as one of the finest ornamentally designed gasholders yet built. This holder is also still in action as originally erected.

There are many other concrete instances of the solid and reliable designs of Westwood & Wright's gasholders, ranging from a few thousand cubic feet to 5 millions in capacity, in all parts of the world, and the firm's early good name has been cherished and enhanced during the later years.

On the outbreak of hostilities the two works at Round Oak and Queen's Cross were among the first in the midlands to be controlled for the manufacture of war materials, undertaking the production of shells of various sizes and descriptions, Admiralty oil service tanks, fabricated ships, hydrogen gasholders for air stations; and, among many interesting items, they built one of the two "Mystery Towers" introduced for dealing with the submarine menace. This was actually erected on the South Coast, ready for floating out to sea, but the Armistice put an end to the project, and the tower is now placed in the Solent, being known as the Nab Light.

Among the firm's specialities may be mentioned their patent valve, which has the unique feature of an oiled and protected face while in the "open position," and so has a special field of its own in gas plant, both on works and in distribution areas. One of the accompanying illustrations shows an example of a 72-in. diameter valve. This is probably the largest gas valve in the world, and was sup-

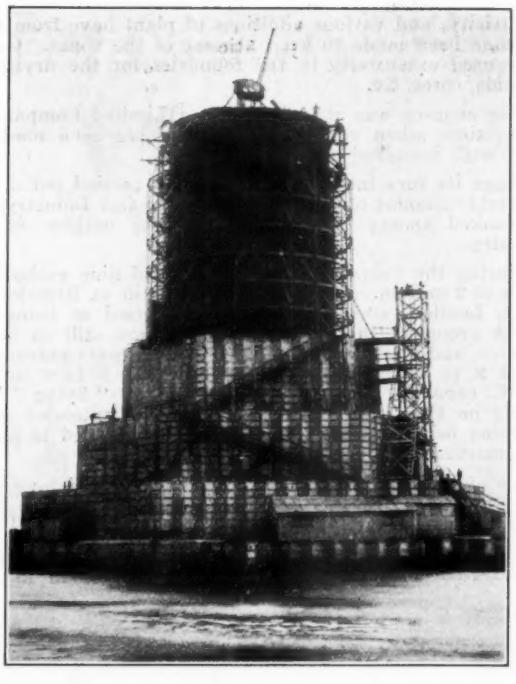
plied to the Koppers coke oven plant erected at Beckton a few years ago. This valve is made in all sizes from 72-in. down to 2-in., and is in constant demand owing to its reliability.

The Company have recently introduced a new line of service valves in sizes 2 in., 3 in., and 4 in., following the same principle, but of a much cheaper and simpler design. This type has been very favourably received by the larger gas undertakings, both at home and abroad, and already several thousands have been sold.

Both types will be on exhibition at the Company's stand at the B.I.F., Castle Bromwich.

Many examples of the firm's activities, both in the Gas Industry and in more general engineering works, including gold mining pit head gear, steel chimneys, and tanks, welded and riveted steel pipe lines, &c., may be seen abroad and in the Colonies—viz., Argentine, Brazil, China, France, Denmark, Italy, Russia, Turkey, Canada, India and Ceylon, South Africa, Australia, New Zealand, West Indies, &c.

Although the heavy constructional part of their work shared the general slump of recent years, their specialities enabled them to keep their foundries and fitting shops fairly active throughout the period, and the Company now look forward with confidence to sharing in the trade revival, and to continuing their efficient services to the Gas Industry as hitherto.



"Mystery Tower" During Erection.

Whessoe-Woodall-Duckham Electro-Detarrers at Manchester and Margate

by K W. FRANCOMBE

A description of two detarrer plants recently put into successful operation, which for differing reasons are of especial interest.

Fig. 2.

The Whessoe Woodall-Duckham Electro-Detarring System was first introduced into the market some four years ago. The first plant was installed at the by-product coke oven plant of the Nunnery Coke and Gas Company, Ltd., Sheffield. That the makers' original claims of a great advance in the art were amply justified is evidenced by the fact that since then no fewer than thirteen further orders for electro-detarrers, comprising 19 unit treaters, have been received.

The success of the system is probably attributable in the main to two factors. First, that it embodies the English Electric patented system of direct generation of high-tension direct current, and is thus the only system at present marketed in which a direct generation system is employed. Secondly, the system has been designed by technicians who have had wide experience of electrical precipitation generally, and hence who are fully conversant with the idiosyncrasies of such systems. Their object has been to design a treating vessel in which all the known failings would be eradicated, and, in this, the makers claim to have been successful.

It is not within the scope of this article to give a description of the methods whereby this has been achieved. The present object is a description of two W.W-D. detarrer plants recently put into successful operation, which for differing reasons are of especial interest. The plants referred to are those installed at the Partington Station of the Manchester Corporation Gas Department, and the Margate Gas-Works, of the Isle of Thanet Gas Light and Coke Company.

The Partington Detarrer.

This plant comprises a single-unit treater capable of dealing with 5 million cu.ft. of gas per day, measured at N.T.P., but actually treated between the retort house governors and inlet condensers, when the gas temperature is 70°-80° C., and there is a suction of about 2 in. W.G. Under these conditions the actual volume of gas treated is upwards of 10 million cu.ft. per day.

High-Tension Generator Plant.

The gas-treating vessel is supplied with negative high tension direct current at a potential approaching 30,000 volts by an English Electric motor generator set. This is illustrated in fig. 1 and comprises a protected type, compound wound, 440 volt D.C. motor, to which are direct coupled in line two patented high-tension generators. These are connected electrically in series so that the current potential at the first generator is about 15 K.V., and at the second about 30 K.V., whence it passes direct and without voltage drop to the treater discharge electrodes.

A unit motor generator set is employed where otherwise it would be necessary to install a motor-driven alternator

supplying a transformer in which low-tension A.C. would be transformed to high-tension A.C. This in turn would be connected with either a static metal-oxide rectifier or a rotating switch, spark-gap rectifier, in order to supply the treater with high-tension D.C. Moreover, it would be necessary to transform the A.C. to a higher voltage than that at which the treater would be eventually supplied owing to rectification losses; and further, owing to the fluctuating voltage of the resultant D.C., the treater insulators would have intermittently to withstand a higher potential than is necessary when employing current of the "straight line" voltage characteristics produced with the motor generator set. With the latter type of equipment there is complete and permanent absence of interference with local wireless and telephonic reception.

The English Electric set is equipped with an overload relay which automatically stops the motor in case of a sustained short circuit, and at the same time gives audible and visual warning of the fact. A distant alarm panel comprising indicator lamps and a Klaxon horn is mounted in the exhauster house, some 600 ft. distant, thus indicating to the attendant that the plant is running and warning him in case of a shut down.

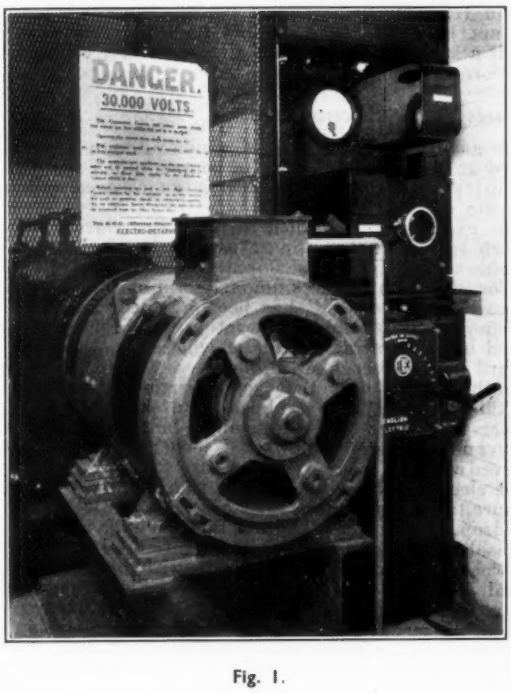


Fig. 1.

The windings of the motor are, however, specially compounded to give the set self-regulating characteristics. If, for example, a flash-over occurs owing to tar bridging, the comparatively heavy discharge current immediately puts an overload on the motor generator set which instantly responds with a reduction of speed. This in turn reduces the voltage and the arc extinguishes before the overload relay, which is dash-pot controlled, has time to trip.

The voltage on the treater, and hence the current passing, is very simply controlled by the shunt field regulator and resistance hand wheel on the control panel. The voltage output of the set varies directly with the speed of the motor. On full gas make, which represents an actual volume of 9-10 million cu.ft. of gas per day, and when extracting 99·8% of the tar fog present, the power requirements of the plant only amount to about 4-5 kW.

The motor generator set is housed in a small building, the high-tension generators being in a screened enclosure within this building. Opening the screen door automatically shuts down the set.

Features of the Partington Plant.

Reference has previously been made to the fact that this plant is of especial interest. It has two main claims to such distinction. In the first place it is installed as an ancillary to the Holton-Cooke patented system of road tar production, descriptions of which have already appeared in the "JOURNAL." The importance of the electro-detarrer is that it extracts with high efficiency the tar fog present in the liquid phase without bringing down the light oils present in the vapour phase.

The second point of interest is that this is the first W.W-D. detarrer to operate on hot coal gas (at a temperature of 70°-80° C.) on the suction side of the exhausters. It is known that in many cases a good deal of permanent trouble has been experienced in the operation of electro-detarrers on hot coal gas (at a temperature

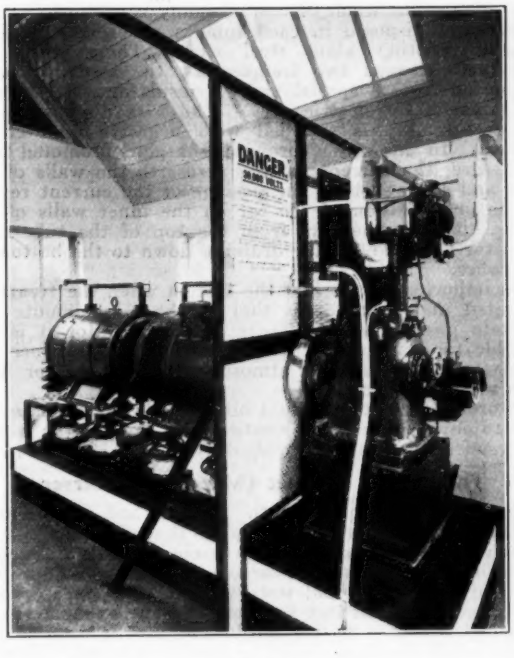


Fig. 3.

around the dew-point of the gas) with electrical instability, poor efficiencies, &c. It is therefore of particular interest to be able to record that, after a few minor difficulties in initial operation had been successfully overcome, the plant is now operating most successfully, and has exceeded its

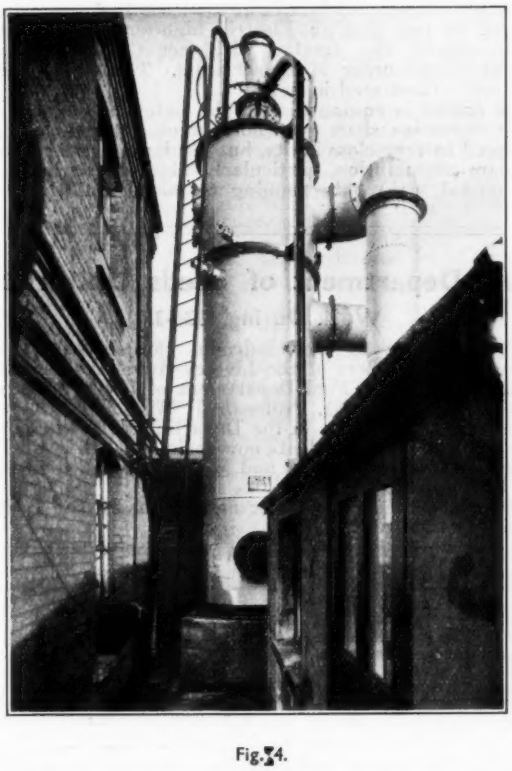


Fig. 4.

guarantees in spite of the fact that it is frequently operating on an overload.

The electro-detarrer only throws about 0·2 in. W.G. pressure drop, and the additional load on the exhausters is therefore negligible.

Gas Treating Vessel.

The treater, which is illustrated in fig. 2, is of the standard W.W-D. design, in which the gas passes upwards through a nest of mild steel tubes which are supported from a tube plate, and housed in a vertical cylindrical mild-steel shell. The whole of this assembly is earthed.

Centrally disposed in each tube is a special corrosion-fatigue resisting alloy steel wire. These wires are tensioned between two frameworks, the assembly being supported from a special type of insulator which cannot be damaged by electric arcs. The wire discharge electrodes assembly is supplied with negative high-tension current. In this way a corona discharge is promoted from each wire, the current passing across to the walls of the tube and so to earth. The passage of the current results in the precipitation of the tar on the inner walls of the tubes, the gas emerging from the top of the tubes free from tar fog, and the tar draining down to the bottom of the tubes.

An important feature of the system when the treater is operated under suction is that in the most remote and unlikely possibility of fracture of the insulator it is not possible for air to be drawn into the treater, since the insulator is sealed from atmosphere in a chamber filled with non-conducting oil.

In order to retain the light oils in the vapour phase and thus to obviate their precipitation with the tar, the treater is lagged with glass silk supplied by Chance Bros.

The Isle of Thanet (Margate) Detarrer.

Since the design of both treater and high-tension generator set is in general similar to that of the Partington plant it will suffice to indicate wherein the main differences lie. The plant is designed for the treatment of 2·5 million cu.ft. of mixed coal and water gas per day, measured at N.T.P., when treated at the outlet of the exhausters and inlet of the rotary washer-scrubber.

This plant has two claims to special interest. First, it is the smallest unit yet installed by the makers in this country, and as such is pioneering electro-detarring at the medium-sized gas-works. Secondly, the prime mover is in this case a small high-speed steam engine, owing to the fact that there is no continuous supply of electricity available at this works.

High-Tension Equipment.

An enclosed type, single cylinder Sisson engine, with a maximum output of 5 B.H.P. at 850-1,000 R.P.M., is direct coupled to two English Electric high-tension generators which supply the treater with negative high-tension current of the order of 26,000 volts. The engine-driven H.T. set is illustrated in fig. 3.

The engine is equipped with the patented Sisson automatic expansion shaft governor, which not only controls the speed to very close limits, but results in great economy of steam consumption, particularly when the engine is (in the normal way) only running on about half load. A variable speed hand-wheel control operating on the governor is also provided, whereby the speed of the engine, and hence the output of the generator set, may readily be regulated without stopping the set.

This small engine runs so quietly as to be almost inaudible, while the makers guarantee that it may be run continuously for many months without shutting down for cleaning and adjusting. The engine is also equipped with a special electrically and mechanically operated steam stop valve of Jas. Tate & Co.'s manufacture. The function of this valve is to stop the engine should a sustained overload, due to a short circuit in the system, occur, or alternatively should the door of the screened-off high-tension enclosure be wrongly opened while the set is running. Either of these contingencies results in the closing of a switch in a low-tension circuit, in which is included a Lucas 12-volt accumulator. This causes the energization of a pair of coils, which releases a pawl, which in turn allows the spring-loaded steam stop valve to shut instantaneously. At the same time a second, alarm, circuit is closed causing a Lucas Altette high-frequency electric horn to sound and a red indicator lamp to light, thus giving audible and visual warning of the shut-down.

It is interesting to note that if the direct generation system (exclusively employed by the Whessoe Company) had not been adopted it would have been necessary to install a steam engine driven alternator set, coupled to a transformer and a rectifier.

Features of the Electro-Detarrer.

The gas-treating vessel is of similar design to that installed at Manchester, but is, of course, much smaller. It is illustrated in fig. 4. It has a guaranteed minimum efficiency of 99%.

The expenditure entailed in the installation of this modern tar extraction apparatus was justified by several valuable savings, the most important being that the necessity for extension of the ammonia scrubbing plant, due to increased gas "makes," has been avoided, and that the efficiency of the scrubbing operation has been greatly improved by eliminating the tar which would otherwise pass forward into the scrubber filling.

Another factor was that some vertical retort tar fog inevitably passed the scrubbers and reached the oxide purifiers and even the gas-drying plant. A much more ready and profitable sale of the spent oxide can now be achieved with an oxide free from tar.

The electro-detarrer throws less than 0·2 in. W.G. back-pressure, and this is more than offset by the reduced pressure drop in the purifiers with a tar-free oxide.

Considerations of space are of the utmost importance at this works, which continues to grow without being able to extend its boundaries. This will be evident from fig. 4. The space occupied by the W.W-D. electro-detarrer is very small, since the treater shell diameter is only 5 ft. and the generator house only measures 13 ft. by 7 ft. 6 in. The detarrer is thus particularly suitable for this works.

Fuel Department of Leeds University

Work During 1934-35

In his Report to the Chairman (Major Geoffrey H. Kitson) and Members of the Livesey Advisory Committee on the work of the Fuel Department of Leeds University for the Session 1934-35, Professor J. W. Cobb states that the number of students in the Department has risen from 22 to 29. Of the 29 students now registered, all are taking degree courses, five in Fuel and Metallurgy and the rest in Gas Engineering.

The analysis of the number of students in the Department may be made thus:

—	1933-34.	1934-35.	1935-36.
1st year B.Sc. Course	6	5	14
2nd ,, ,, ,,	7	6	7
3rd and 4th years B.Sc. Course	10	9	5
Post graduate degree students	6	1	..
,, ,, diploma ,,	..	..	..
,, ,, research students	1	1	3
	30	22	29

During the session under review, students attended for the first time a newly arranged course, which should prove very useful, in methods and materials of building construction, given in the Civil Engineering Department. Attendance has been continued on the course dealing with the methods and results of coal cleaning given in the Mining Department. No other addition has been made to the curriculum apart from those changes in each course required to keep it abreast of recent developments.

APPOINTMENTS.

N. R. Balmford, B.Sc.	Fletcher, Russell, & Co., Warrington
G. E. Hall, B.Sc.	Simon-Carves, Ltd., Cheadle Heath, Manchester
K. Higginson, B.Sc.	Clayton, Son, & Co., Ltd., Leeds
H. Millner, B.Sc.	Scarborough Gas Company
I. J. Lane, M.Sc.	Bournemouth Gas and Water Company
D. G. Woolfenden, B.Sc.	Foster & Pullen, Ltd., Bradford
J. E. Cullingworth, B.Sc.	W. C. Holmes & Co., Ltd., Huddersfield
F. Allen, B.Sc.	Co-Ordinating Engineer, South-Western Gas and Water Corporation
W. H. Blundstone, B.Sc.	Engineer and Manager, Newark-on-Trent Gas Department
L. W. Harrison	Assistant Manager, Barnsley Gas Company
H. Q. Marris, B.Sc.	Stretford and District Gas Board

GRADUATES.

D.Sc., 1935	R. A. Mott (William Walker Exhibition B.Sc., 1st Class Honours 1922; with University of Sheffield and Midland Coke Research Committee)
Ph.D.	H. C. Millett Institution Gas Research Fellow)
B.Sc. Honours—1st Class	H. Millner (Leblanc Medal) J. E. Cullingworth
,, ,, —2nd Class	D. G. Woolfenden
B.Sc. Ordinary	J. H. Bramley A. A Clark J. E. Cooper A. Lister H. Q. Marris G. C. N. Coates

Electricity Company Oppose Gas Order

On Jan. 10, Mr. J. F. Ronca, O.B.E., Director of Gas Administration to the Board of Trade, conducted a public enquiry at the Guildhall, Winsford (Cheshire), into the application by the Winsford U.D.C. for a Special Gas Order.

The objects of the Winsford Council's Special Order were to extend the limits of gas supplies to the Parish of Clive and part of the Parish of Stanthorne (areas to be included in the Urban District under the boundary proposals of the Cheshire County Council, taking effect as from April 1), and to extend the supplies also to parts of the Parishes of Bostock, Marton, Darnhall, and Little Budworth.

Mr. H. Royston Askew appeared for the Winsford Urban District Council and was supported by Mr. George Evetts, Consulting Gas Engineer.

Mr. J. W. Thomas opposed the application on behalf of the Mid-Cheshire Electricity Supply Company, Ltd., whose chief witness was Mr. W. Fennell, the Company's General Manager and Engineer.

Opposition in order to secure protection clauses was offered by the Cheshire County Council and by the Weaver Navigation Trustees.

Mr. ASKEW, outlining the case for the Urban District Council, said that in 1901 the Council acquired the Undertaking from the Over and Wharton Gas Company, Ltd. For 35 years no further powers had been conferred upon the Council, and there had been no extension of the gas limits. The Ministry of Health in June last announced the decision to extend the boundaries of the Winsford Urban District and add certain areas. The Gas-Works of the Council at present occupied quite a small area of 1¼ acres. Clive and parts of the Parishes of Stanthorne, Marton, Little Budworth, Darnhall, and Bostock were proposed to be dealt with under the Order, and it was proposed also to deal with small parts in the Northwich Gas Company's area and a small part within the limits of the Middlewich Gas Light and Coke Company, not now supplied by gas. There was no objection to this from these Companies.

The Council, he continued, also sought to be authorized to charge the differential price to apply to the whole of the proposed extended limits of supply other than those areas which would be in the new Urban District. The amount of the proposed differential charge would be 6d. per 1,000 cu.ft. The Council also asked for authority to use more land for gas-works purposes and it was proposed to add ½ an acre. There was, he said, no objection to any part of the Order except that relating to the extension of limits.

The total capital expenditure on the Gas Undertaking to date was approximately £48,000, but a large part of the capital had been repaid and the outstanding loan debt was now £13,400. In a few years the last of these loans will have been repaid. The price of gas at Winsford compared favourably with the charges of similar undertakings in Cheshire. Price was, he supposed, one of the tests of good management and reflected the wise policy of the Council in the past. That policy had always been to make the Undertaking self-supporting financially. The Council did not make any contribution to the rates, neither did they draw from the rates to support the Gas Undertaking. In Clive and part of Stanthorne to be added to the Urban district there was now, and had been for some time past, a demand for gas, but the Council had not been able to satisfy the demand because the district was outside its own gas limits.

Mr. Askew dealt with small areas beyond what would be the new Council boundary, and said it was desirable that the people in all the places mentioned should have a supply of gas made available to them.

The Council had no intention whatever of running the Undertaking at a loss. The Council had simply prepared to extend facilities as and when the demand justified it. There was objection by the Mid-Cheshire Electricity Supply Company. They did not represent, and they did not and could not speak for, the inhabitants of the proposed added area, and they did not represent the ratepayers of Winsford. The Mid-Cheshire Electricity Company made three main contentions. First, they said the Urban Council should not be allowed to extend the gas limits to compete with them. Secondly, they said that if the Council did supply gas it would involve them in financial loss, and therefore for that reason powers ought not to be granted. "Thirdly," said Mr. Askew, "they say the Council have excluded them from the Council housing scheme and prevented Council tenants from having electricity."

Mr. Askew said it was alleged in the objections deposited in October that the Council had excluded electricity from their housing schemes. That was denied specifically, but, notwithstanding, the Company thought fit to repeat the allegation in their rejoinder.

"We have imposed no restrictions on our tenants," said Mr. Askew. The Council houses were fitted up with gas when built—a perfectly normal thing. There was nothing whatever to justify anyone for one moment suggesting that any pressure had been used to make tenants use one thing or another. "No single tenant has asked for electricity until, extraordinarily enough, the last month, when we suddenly found seven of the tenants applying."

The DIRECTOR: That was within a month of this enquiry?

Mr. ASKEW: Yes. The Council said the tenants could have the electricity provided the Council were not involved in any costs. Continuing, he said the point made about the Council being involved in a loss if gas supplies were made to the various areas was a matter for the ratepayers of Winsford. The ratepayers unanimously supported the application. "This opposition," he said, "is an attempt to reverse the policy of Parliament and the Board of Trade. The Electricity Company are here because they are afraid for the profits of their shareholders. In so far as they have any fears of that sort, it must be because they must be afraid of the competition of gas."

Mr. *George Evetts*, Consulting Gas Engineer, was the first witness called for the Winsford Urban District Council. He produced figures showing an increasing production of gas in Winsford. From a gas supply point of view, Clive and Stanthorne were ready to be developed, and the number of prospective consumers would make it an economic proposition.

Mr. ASKEW: If the competition of gas is considered seriously, what does that mean?—The Electricity Company want us to be denied this area. They fear competition, and if that fear is real, then the public is being denied something they should have and which they could have if we went there.

Mr. *Bertram Victor Andrews* (Chairman of the Winsford Gas Committee) was next called.

Mr. ASKEW: Has your Council ever objected to its tenants using electricity?—Definitely, no.

Until a few weeks ago have you ever had an application to use electricity?—No.

Did you suddenly receive on Dec. 10 an application from seven tenants in Wharton?—Yes.

The Electricity Company asked if you had any objection to the tenants being supplied with electricity?—Yes.

And did the Housing Committee resolve and the Council confirm that you had no objection providing there was no financial liability to the Council as landlords?—Yes.

Mr. THOMAS: There has been no extension since 1901?—No.

What primarily has decided you to extend now?—The development of Clive and Stanthorne. There have been insistent demands from those districts.

At this point Mr. Thomas informed the Director that his Company was not objecting to the Council's application to supply within the adjusted boundary.

Case for the Opposition.

Mr. THOMAS then opened the case for the Mid-Cheshire Electricity Supply Company. He said that the main ground of the objection was that the proposed extended areas were not suitable for supplying gas because of the sparse population and the absence of industrial works. Most of the area was agricultural. Therefore it was improbable that the supply could be remunerative, even assuming there was no alternative source of supply already in the field. Many of the residents in the district were being supplied with electricity on an economic basis. He contended that if the Council tried to compete, it would tend to raise the price of both gas and electricity.

Mr. *William Fennell* (General Manager and Engineer to the Mid-Cheshire Electricity Supply Company) said his Company had statutory powers to supply residents over the whole of the area now being considered. In towns and suburbs they did not worry about competition. They had never lost a customer to gas. No one ever changed back. They never thought of gas competition in towns. If, however, gas went into the rural areas it would be more difficult for him to get his Company to agree to extensions.

Mr. ASKEW: You always think in terms of electricity taking away from gas?—Yes.

Witness said overhead lines in the country enabled them to charge the same price as in the town. "We are giving some of the cheapest power in the country," he added.

Mr. ASKEW: In those circumstances you stand to lose no more from the competition of gas in the rural area than you do in the urban area?—Yes; if we do not get the population in the rural area, then the capital outlay is no longer justified, and we would not have put up the lines if we had known beforehand.

Do you still tell me you do not fear the competition of gas?—We do not fear the competition in the towns, but only in the

country where there is only enough for ourselves. We supply for lighting, heating, and cooking, but if you go to Little Budworth with gas you are bound to take some from us, and Little Budworth will be a burden instead of a help.

Mr. Askew's Reply.

Mr. ASKEW said: "The whole foundation of this case is essentially illogical. Either the Electricity Company fear competition or they do not. If they do not fear any competition what are they doing here? If they do fear it, well and good. It would have no merits. It would be against public policy and would be purely selfish. We find that Mr. Fennell did apprehend that business would be taken away from him, and he comes here to ask the Board of Trade not to allow a competitor to enter." The case for the opposing Company, said Mr. Askew, was flatly at variance with the whole policy of the Board of Trade and of Parliament in regard to public services.

West's Gas Improvement Co., Ltd.

Work in 1935

The gratifying improvement in the industrial position of the country as a whole is reflected in the greatly increased business transacted by Messrs. West's Gas Improvement Company during the year.

Complete installations of Glover-West vertical retorts were ordered by, and have been completed and put into service for, the Buxton Corporation Gas Department; the Montrose Gas Company, Scotland (an extension to the Glover-West unit built in 1921); the Kilsyth Corporation Gas Department, Scotland, and the Slough Gas and Coke Company. Contracts for Glover-West carbonizing plants on which work is now proceeding were entered into with the Gas Light and Coke Company, London (for a large installation with coal plant, coke plant, and waste-heat recovery equipment at the Company's Southend station); the Svendborg Municipality, Denmark (for a complete retort house unit and considerable ancillary gas-works plant); the Ebro Irrigation and Power Company, Ltd., Spain (for a vertical retort installation at the Company's Mataro Gas-Works); the Newry U.D.C. Gas Department, Co. Down, Ireland; the South Brisbane Gas Light and Coke Company, Ltd., Australia (for an extension to the Glover-West plant built for this Company in 1930); the Wellingborough Gas Light Company, Ltd. (for an extension to the carbonizing unit which began service in 1932, together with new coke-handling and grading plant); the Salford Corporation Gas Department (for an extension to the existing Glover-West vertical retort plan in addition to the work of reconstruction mentioned below); the West Bromwich Corporation Gas Department (for an extension to the retort house erected at this Works in 1928); and the Romford Gas Company (for an extension of Glover-West vertical retorts, which constitutes the fifth order received from this Company). In France a third order for Glover-West plant for the Vannes Undertaking and a second order for the Tarbes Undertaking were received by the Cie. Gle. de Construction de Fours.

Installations of Glover-West vertical retorts already under construction were started up during the year and are now in regular service at the Works of the Clevedon Gas Company (a third order); the Yeadon and Guiseley Gas Company; the Bilston Gas Light and Coke Company; the Llanelly Gaslight Company; the Buckhaven and Leven Gas Commissioners (a second order); the Stratford-on-Avon Corporation Gas Department; and the Johannesburg Municipal Gas Department, South Africa (a second order). Westvertical carbonizing chambers were represented by plants put into service at the Eastern Gas-Works of the Copenhagen Municipal Gas Department, Denmark, and at the Works of the Watford and St. Albans Gas Company.

Schemes of reconstruction and modernization on long-established plants of Glover-West construction were undertaken for the Manchester Corporation Gas Department (for the remodelling of plant at the Department's Rochdale Road Gas-Works, now completed, together with new waste-heat recovery and producer breeze-burning equipment); the Gas Light and Coke Company, London (for the reconstruction of the extensive Glover-West installation at the Company's Fulham Station); and the Salford Corporation Gas Department (for the conversion of existing Glover-West vertical retort plant to the modern design), this work, together with the extension already mentioned, forming an important part of the large scheme of gas-works modernization now being put into motion by the Salford Gas Department.

Under the heading of retort house equipment there were orders for waste-heat recovery plant from Hobart, Tasmania; Londonderry, Ireland; Musselburgh, Scotland; Peebles, Scotland; Coventry; and Bury; and for producer breeze-firing equipment from Bergen, Norway; Rio de Janeiro, South America; Bury; Blackburn; Newcastle-on-Tyne; and Stafford.

Fuel Handling.

Much extremely interesting and progressive work has been done on the fuel-handling side. The comprehensive coal-handling plants of West design and construction ordered by the Harrogate Gas Company and the Newcastle-on-Tyne and Gateshead Gas Company (for the Company's Howdon Works) are now both completed and in service. Modern units for the grading and preparation of coke for sale were put in hand for the Hoylake Urban District Council Gas Department, the West Bromwich Corporation Gas Department, the Dudley, Brierley Hill, and District Gas Company, and the Stretford and District Gas Board, and a coke plant at the works of the Rio de Janeiro Gas Undertaking is in process of conversion to the West system.

Technical problems which have presented themselves during the year have been met by effective developments in design. For example, the improvement in the design of the screening racks in the West coke grader, each line of grader fingers now being allowed sufficient independent play horizontally to remove the possibility of the openings becoming choked by accumulated smalls and dust. The desirability of a coal elevator to operate in the dead vertical direction at the Slough Gas-Works resulted in a design with interesting points. The belt-bucket type was adopted, and the speed of operation (which is more than double that of the more usual chain-bucket type) as well as the profile of the buckets was determined by the special considerations to which the stipulated vertical travel gave rise. Coal discharge at the elevator head relies on the centrifugal force imparted by the speed of travel. A coke elevator of similar type designed for the Romford Gas Undertaking also has a novel feature in its construction. The entire elevator boot is pivoted and adjustable to provide the means of maintaining correct tension in the band. The control of the flow of producer gas to the combustion chambers in Glover-West vertical retort settings was another matter which came under review in 1935, and this has been facilitated by the introduction of graduated nostril plugs, with, besides, some other improvements in the design of the setting at this point.

"Mechanical World Year Book," 1936*

The use of steam for heating has been much advocated as a means of securing economy, particularly in factories generating their own power; indeed, to achieve the same object, some power stations supply low-pressure steam to neighbouring factories. The power generation and economic side of the question has been thoroughly explored, but there is one aspect which has not received so much attention; this concerns the strength of the vessels and plant used for steam heating, particularly as these are often of unusual proportions determined by the form of the processed material and the need for securing efficient heat transfer. To meet this need, which is felt equally by engineers responsible for the purchase and maintenance of industrial plant and by those who have to construct it, a new section has been included in the 1936 edition of the "Mechanical World Year Book" dealing with the strength of tubes, cylinders, and pans subjected to external pressure. The formulæ will doubtless be found to have many applications in other directions besides plant for industrial process work.

* Emmott & Co., Ltd., "Mechanical World" Office, 31, King St. West, Manchester. 1s. 6d.

Electric Arc Welding Practice*

Although welding by the electric arc process was actually carried out as early as 1887, its development was retarded owing to the fact that early in the twentieth century oxy-acetylene gas welding was introduced shortly after the discovery of acetylene, and even to-day, as is stated in the preface to "Electric Arc Welding Practice," by H. I. Lewenz, M.I.Mech.E., M.I.E.E., the art is so far from being an exact science and is developing so rapidly that in many respects chemists, engineers, and welders have still perforce to feel their way.

The multifarious applications of arc welding are daily becoming more manifest—the Gas Industry needs no reminder of this fact—and the volume has been written in the hope that it will be of material assistance to those actually engaged in the work. The Author has made no attempt to treat the subject exhaustively, but has succeeded by practical examples in showing some of the difficulties with which the welder has to contend. This wise step has resulted in the production of an essentially business-like handbook and a ready guide to modern arc welding practice. The work of reference is greatly facilitated by the use of side-headings and an ample index.

The Author deals almost exclusively with the subject of fusion welding and confines himself to the consideration of the electric arc as a means for effecting the weld. Since automatic welding is only applicable at the present time in relatively few cases, the problems dealt with in the book are those connected with manual arc welding, which is by far the most common practice.

In arc welding it is of paramount importance that the operator should have a working knowledge of the metals he is about to weld so as to select the most suitable metal for the electrode, and for this reason the second chapter is devoted to a survey of materials, their characteristics and "weldability." Electrodes are detailed in the following chapter, which is supplemented with clear diagrams which are so excellent a feature of this work. Mr. Lewenz has apparently paid great attention to the importance of clear diagrams, which at once convey to the reader their intended meaning. The process of metallic arc welding is then fully dealt with, and is followed by a chapter on types of welded joints.

A complex problem in all forms of welding is that of stresses and deformation brought about by the expansion and contraction of the metal as a result of the heat of welding. The Author details means for mitigating these stresses, and so preventing damage to the work or failure of the weld. Subsequent chapters deal with the cold and hot welding of cast iron; testing of welds, which is absolutely essential to successful welding on a large scale; the equipment and arrangement of welding shops; and applications of welding. There is also included an appendix with tables of diameters and lengths of electrodes commonly used, sundry weights and measures and conversion factors, and welding currents. In addition to the excellent diagrams already referred to, the book contains many illustrations of modern welding plant and examples of work carried out by the arc welding process.

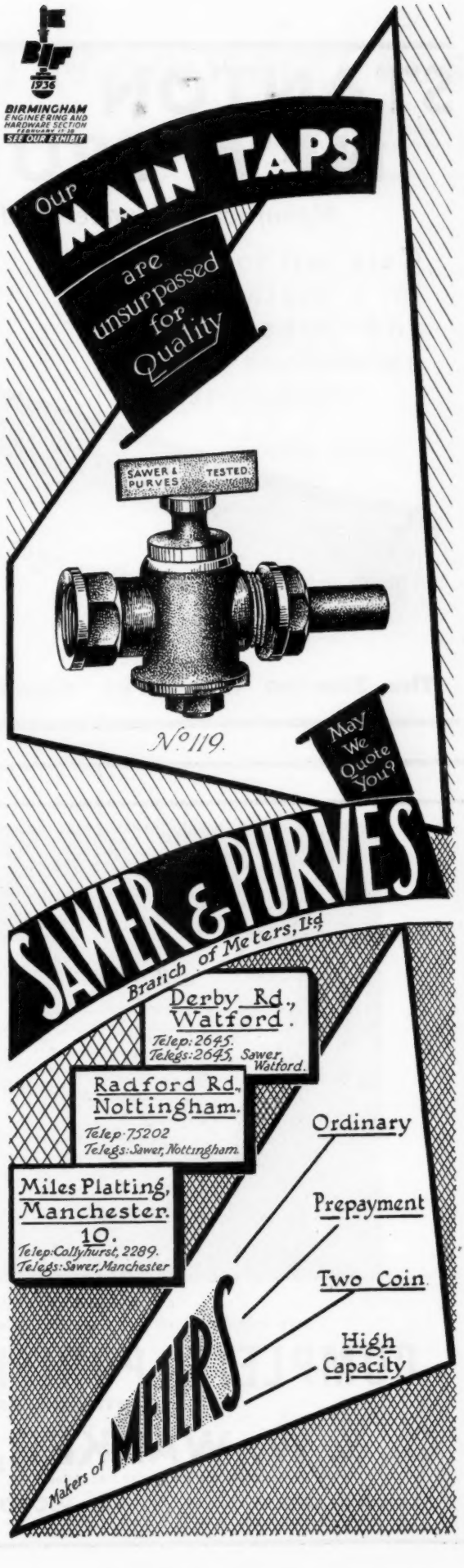
* Crosby Lockwood & Son, Ltd., Stationers' Hall Court, E.C.4. Pp. 126. Price 8s. 6d. net.

"Electrical Year Book," 1936*

An important development in Electrical Engineering during the year has been the issue of new regulations, and their subsequent amendment by the Institution of Electrical Engineers. The tables relating to Cables and Conduit Capacity, which have formed a feature of the "Electrical Year Book" for many years, have been revised to conform with the latest of these regulations.

Electricity tariffs have received much attention in the last twelve months, and accordingly some explanatory matter on this subject has been added. Other new subject matter concerns protective systems for generators, voltage regulation, in the section on transmission and distribution, and some revisionary matter in the section on lighting. The tables on electrified railways, and certain paragraphs adjoining them, have been completely revised, and include new lines and extensions opened during the year. There is also, of course, the general data and information which have made this book so useful and popular among all who have to do with or use electrical plant and machinery.

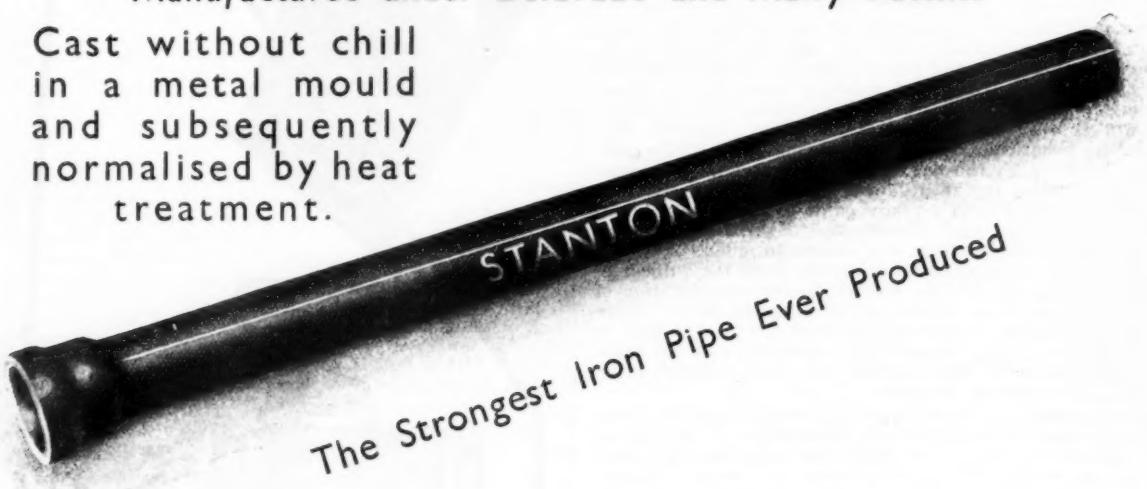
* Emmott & Co., Ltd., "Mechanical World" Office, 31, King St. West, Manchester. 1s. 6d.



STANTON
NEW SPUN IRON PIPE

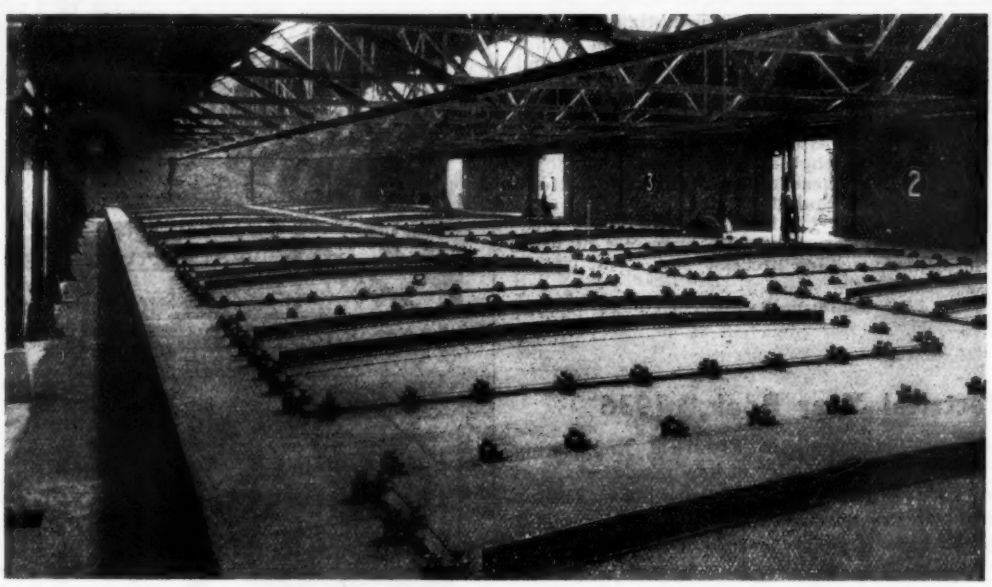
Manufactured under Delavaud and Mairy Patents

Cast without chill in a metal mould and subsequently normalised by heat treatment.



The Strongest Iron Pipe Ever Produced

The Stanton Ironworks Company Limited, Near Nottingham



AT BRADFORD CORPORATION GAS WORKS.

FIVE PURIFIERS 45 FT. x 35 FT. x 6 FT. WITH MILBOURNE OUTSIDE VALVES.

COMPLETE PURIFIER INSTALLATIONS

WITH C.I. OR STEEL BOXES

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'Phone: Victoria No. 1941 'Grams: "Fortress," Sowest, London

Gas Markets and Manufactures

Stock Market Report

(For Stock and Share Lists, see later pages)

The feature of Stock Exchange business last week was the activity in industrial, oil, and rubber shares which, despite a large profit-taking movement at the end of the week, closed with prices on the upgrade. The interest taken in these sections naturally left the gilt-edged market somewhat neglected and prices were inclined to weaken, a position which is likely to be accentuated if the present heavy demand for sound industrial shares continues and money remains cheap.

This set-back in gilt-edged securities did not extend generally to other high-class investment issues. In fact, the contrary was the case with Gas stocks and shares, for though price changes were few these, with one exception, showed improvement. Alliance and Dublin ordinary gained 2 to 140, at which price the yield is a clear 5%. South Metropolitan and South Suburban ordinaries both rose 1 to 134½ and 132½ respectively; Gas Light 3½% maximum also hardened 1 to 90½; while on the Provincial Exchanges Weston-super-Mare 4% debenture improved 2 points to 99. The only reaction occurred in Liverpool ordinary with a drop of 1 to 135 on the local Exchange.

It is satisfactory to note that the lists for the issue last week by the Wandsworth and District Gas Company of £500,000 4% preference stock at 104½ were closed soon after opening, the issue being heavily oversubscribed. An issue by tender by the Stourport Gas Company of £10,000 4½% preference stock was also oversubscribed, and the average of the accepted tenders worked out at £5 0s. 7·78d. per £5 of stock.

Current Sales of Gas Products

The London Market for Tar Products.

Jan. 20.

The tar products market remains steady, values being at about the following levels:

The price of pitch is called 43s. to 45s. per ton f.o.b.

Creosote is about 5½d. per gallon.

Refined tar, 4d. per gallon in bulk at makers' works.

Pure toluole, 2s. 9d. to 2s. 10d.; pure benzole, 1s. 7d. to 1s. 8d.; 95/160 solvent naphtha, 1s. 8d. to 1s. 9d.; and 90/160 pyridine about 4s. 9d.—all per gallon naked at makers' works.

Tar Products in the Provinces.

Jan. 20.

The average prices of gas-works products during the week were: Gas-works tar, 24s. 6d. to 29s. 6d. Pitch—East Coast, 42s. 6d. to 45s. f.o.b. West Coast—Manchester, Liverpool, Clyde, 42s. 6d. to 45s.* Toluole, naked, North, 2s. 2d. to 2s. 4d. Coal-tar crude naphtha, in bulk, North, 7¾d. to 8d. Solvent naphtha, naked, North, 1s. 6d. to 1s. 6½d. Heavy naphtha, North, 1s. to 1s. 1d. Creosote, *ex* works, in bulk, North, liquid and salty, 4¾d. to 5d.; low gravity, 4½d. to 4¾d.; Scotland, 4¾d. to 5d. Heavy oils, in bulk, North, 4¾d. to 5d. Carbolic acid 60's, 2s. 4d. to 2s. 6d. Naphthalene, £18 to £20. Salts, 90s. to 95s., bags included. Anthracene, "A" quality, 2½d. to 3d. per minimum 40%, purely nominal; "B" quality, unsalable.

* All prices for pitch are now quoted on the basis of f.o.b. In order to arrive at the f.a.s. value at any port it will be necessary to deduct the loading costs and the tolls whatever they may be.

Tar Products in Scotland.

GLASGOW, *Jan.* 18.

While prices are steady there is not much activity apparent except in the execution of old contracts.

Crude gas-works tar.—The actual value is 30s. to 31s. per ton *ex* works in bulk.

Pitch.—Quotations for vertical grade are maintained at 35s. to 37s. 6d. per ton f.o.b. Glasgow for export, and 35s. per ton *ex* works in bulk for home trade.

Refined tar is quoted freely at 2¾d. to 3d. per gallon naked at makers' works, according to quantity.

Creosote oil.—Market is very steady. B.E.S.A. Specification, 5¼d. to 5½d. per gallon; low gravity, 5⅜d. to 5⅝d. per gallon; and neutral oil, 5⅜d. to 5⅝d. per gallon; all f.o.r. in bulk.

Cresylic acid.—The position remains unchanged in this district with supplies well looked after. Pale, 97/99%, 1s. 5d. to 1s. 5½d. per gallon; dark, 97/99%, 1s. 3d. to 1s. 3½d. per gallon; and pale, 99/100%, 1s. 5d. to 1s. 6d. per gallon; all *ex* works naked.

Crude naphtha is commanding 5½d. to 5⅝d. per gallon, according to quality and district.

Solvent naphtha.—90/160 grade is now 1s. 4½d. to 1s. 5½d. per gallon, and 90/190 heavy naphtha is 1s. to 1s. 1d. per gallon.

Motor benzole is nominal at 1s. 3½d. to 1s. 4d. per gallon in bulk at makers' works.

Pyridines.—90/160 grade is 4s. 6d. to 5s. per gallon, and 90/140 grade 5s. to 5s. 6d. per gallon.

Benzole Prices.

These are considered to be the market prices for benzole at the present time:

	s. d.		s. d.	
Crude benzole . . .	0 9½	to	0 10	per gallon at works
Motor ,, . . .	1 3	,,	1 3½	,, ,, ,,
90% ,, . . .	1 4	,,	1 4½	,, ,, ,,
Pure ,, . . .	1 7½	,,	1 8	,, ,, ,,

Contracts Advertised To-Day

Carbonizing Plant.
City of Plymouth Gas Department. [p. 217.]

Coke Breakers.
Newbury Gas Undertaking. [p. 217.]

Engine and Exhauster.
Prestatyn Gas Department. [p. 217.]

Lamps and Columns.
Severn Valley Gas Corporation, Ltd., and Gas Consolidation, Ltd. [p. 217.]

Meter (Station).
Prestatyn Gas Department. [p. 217.]

Paints, Oils, &c.
Blackpool Corporation. [p. 217.]
Severn Valley Gas Corporation, Ltd., and Gas Consolidation, Ltd. [p. 217.]

Pipes (Concrete).
Blackpool Corporation. [p. 217.]

Purifier Lids.
Prestatyn Gas Department. [p. 217.]

Refractory Materials.
Severn Valley Gas Corporation, Ltd., and Gas Consolidation, Ltd. [p. 217.]

Retort Plant.
Prestatyn Gas Department. [p. 217.]

Stores (Tools, Belting, &c.).
Blackpool Corporation. [p. 217.]
Severn Valley Gas Corporation, Ltd., and Gas Consolidation, Ltd. [p. 217.]

Valves, Cocks, &c.
Prestatyn Gas Department. [p. 217.]
Severn Valley Gas Corporation, Ltd., and Gas Consolidation, Ltd. [p. 217.]

Trade Notes

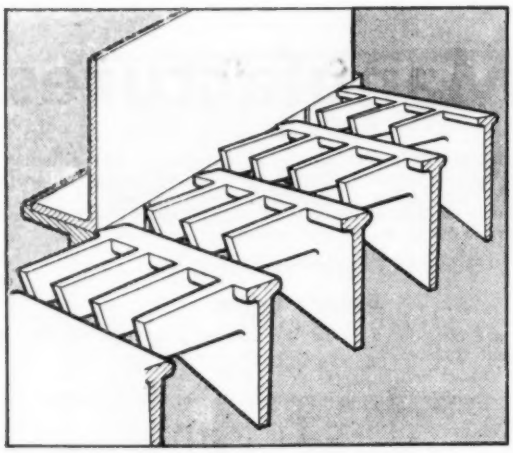
Abertillery Extensions.

In connection with the recent advertisement regarding the modernization of the Abertillery Gas-Works, the following tenders were provisionally accepted: (1) Intermittent vertical chamber ovens, W. J. Jenkins & Co., Retford; (2) Spiral guided gasholder, Firth, Blakeley, & Co., Church Fenton, Leeds; (3) Benzole recovery plant, Kirkham, Hulett, & Chandler, Ltd.; (4) "Hi-Lift" shovel, Chaseside Engineering Company, Middlesex.

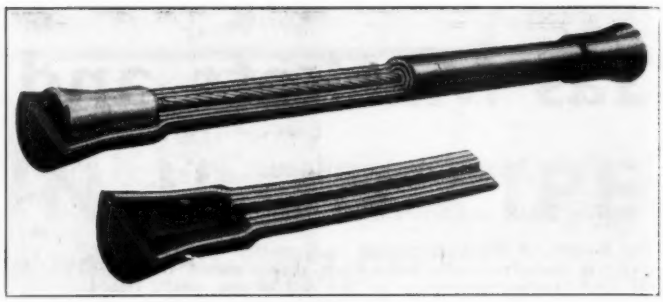
Diaries, Calendars, &c., Received

Seasonable gifts in the shape of useful diaries, calendars, &c., have been received from the undermentioned friends, whose good wishes are heartily reciprocated.

Chancery Lane Printing Works, Ltd., Plough Court, E.C. 4.
Drakes, Ltd., Halifax.



The grading racks keep clean because they are left free to move relative to each other and to the tray.



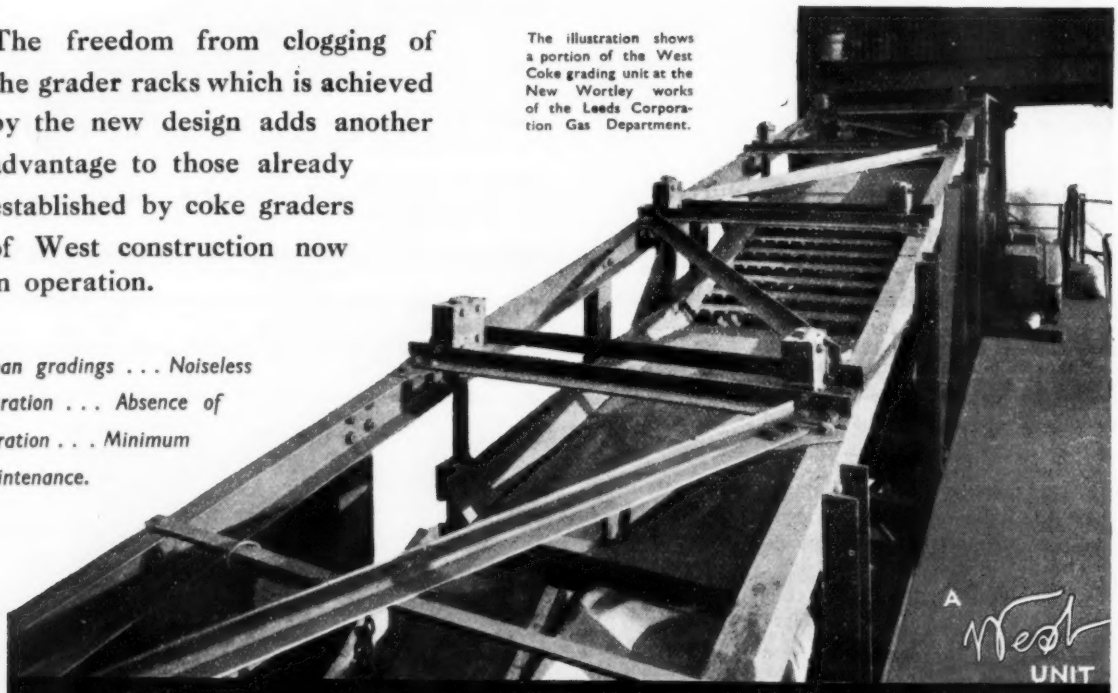
The improved flexible suspension members are made with a core of plough-steel extra-flexible wire rope set in a mould of alternative layers of vulcanized rubber and rubber-impregnated canvas, all made true to length and size.

A Further Advance in Coke Grading Practice . . .

The freedom from clogging of the grader racks which is achieved by the new design adds another advantage to those already established by coke graders of West construction now in operation.

Clean gradings . . . Noiseless operation . . . Absence of vibration . . . Minimum maintenance.

The illustration shows a portion of the West Coke grading unit at the New Wortley works of the Leeds Corporation Gas Department.



THE *West* COKE GRADER

. . . Modern methods to meet modern demands . . .

THE WEST SYSTEMS

OF COAL AND COKE HANDLING AND PREPARATION

WEST'S GAS IMPROVEMENT COMPANY, LTD.

MANCHESTER: Albion Ironworks, Miles Platting — 'Phone: COLLYHURST 2961 : 'Grams: "STOKER, MANCHESTER"

LONDON: Columbia House, Aldwych, W.C. 2 — 'Phone: HOLBORN 4108 : 'Grams: "WESGASCO, ESTRAND, LONDON"

MEMBERS OF THE SOCIETY OF BRITISH GAS INDUSTRIES.

STOCK AND SHARE LIST

Official Quotations on the London Stock Exchange

Issue. £	Stock or Share	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations Jan. 17.	Rise or Fall on Week	Transactions, Lowest and Highest Prices During the Week.
1,551,868	Stk.	Sept. 9	7	7	Alliance & Dublin Ord. ...	135—145	+2	142½—144
374,000	,,	Dec. 16	4	4	Do. 4 p.c. Deb. ...	95—100	...	...
557,655	,,	Aug. 12	7	7	Barnet Ord. 7 p.c.	165—170	...	...
300,000	1	Oct. 7	1 9/32	1 4/32	Bombay, Ltd.	1 3/32—1 6/32	...	...
178,480	Stk.	Aug. 12	9½	9½	Bournemouth sliding scale ...	222—232	...	...
550,050	,,	,,	7	7	Do. 7 p.c. max. ...	171—176	...	174½—176
489,160	,,	,,	6	6	Do. 6 p.c. Pref. ...	150—155	...	...
50,000	,,	Dec. 16	3	3	Do. 3 p.c. Deb. ...	82—87	...	...
262,025	,,	,,	4	4	Do. 4 p.c. Deb. ...	103—108	...	...
335,000	,,	,,	5	5	Do. 5 p.c. Deb. ...	123—128	...	...
357,900	,,	Aug. 12	7½	7½	Brighton, &c., 6 p.c. Con. ...	170—175	...	...
649,955	,,	,,	6½	6½	Do. 5 p.c. Con. ...	156—161	...	...
205,500	,,	,,	6	6	Do. 6 p.c. 'B' Pref.	142—147	...	146
855,000	,,	Sept. 23	8	7	British Ord.	152—157	...	154—156
100,000	,,	Dec. 16	7	7	Do. 7 p.c. Pref.	153—158	...	...
350,000	,,	,,	5½	5½	Do. 5½ p.c. 'B' Cum. Pref.	110—115	...	...
120,000	,,	,,	4	4	Do. 4 p.c. Red. Deb. ...	96—101	...	...
450,000	,,	,,	5	5	Do. 5 p.c. Red. Deb. ...	107—112	...	...
200,000	,,	,,	17/6§	3½	Do. 3½ p.c. Red. Deb. ...	98—100	...	...
100,000	10	22 May '33	6	4	Cape Town, Ltd.	1—3	...	...
100,000	10	6 Nov. '33	4½	4½	Do. 4½ p.c. Pref. ...	1—3	...	30 —32/6
150,000	Stk.	Jan. 6	4½	4½	Do. 4½ p.c. Deb. ...	81—86*	...	84½—85
626,860	,,	July 22	6	6	Cardiff Con. Ord.	133—138	...	...
98,936	1	Sept. 23	2/-	2 -	Colombo, Ltd., Ord.... ...	1 2/32—1 4/32	...	...
24,500	1	,,	1 4/4	1 4/4	Do. 7 p.c. Pref....	20/—22/-	...	...
609,204	1	Oct. 7	-/11·48	- 11·48	Colonial Gas Assn. Ltd. Ord.	19/6—21/6	...	...
296,053	1	,,	1/3·30	1/3·30	Do. 8 p.c. Pref.	24/6—26/6	...	...
1,775,005	Stk.	Aug. 12	6	5	Commercial Ord.	100—105	...	103
620,000	,,	Dec. 2	3	3	Do. 3 p.c. Deb. ...	85—90	...	...
286,344	,,	Aug. 12	5	5	Do. 5 p.c. Deb. ...	121—126	...	125½
807,560	,,	Aug. 12	7	7	Croydon sliding scale ...	151—156	...	119
569,590	,,	,,	5	5	Do. max. div.	113—118	...	...
620,385	,,	Dec. 16	5	5	Do. 5 p.c. Deb.... ...	121—126	...	...
239,000	,,	Aug. 12	5	5	East Hull Ord. 5 p.c.... ...	109—112	...	...
181,625	,,	Aug. 12	6	6	East Surrey Ord. 5 p.c. ...	132—137	...	...
175,609	,,	Dec. 16	5	5	Do. 5 p.c. Deb. ...	120—125	...	...
19,284,128	,,	Aug. 12	5⅜	5⅜	Gas Light & Coke 4 p.c. Ord.	27/—28/-a	...	27/4½—27/9
2,600,000	,,	,,	3½	3½	Do. 3½ p.c. max.... ...	89—92	+1	91½—92
4,477,106	,,	,,	4	4	Do. 4 p.c. Con. Pref. ...	107—110	...	109—110
8,602,497	,,	Dec. 2	3	3	Do. 3 p.c. Con. Deb. ...	89—92	+½	90—92
3,642,770	,,	,,	5	5	Do. 5 p.c. Red. Deb. ...	115—118	...	117—118½
3,500,000	,,	,,	4½	4½	Do. 4½ p.c. Red. Deb. ...	113—116	...	114
270,466	,,	Aug. 12	6	6	Harrogate New Cons. ...	132—137	...	...
140,000	1	Sept. 23	1 7½	1 7½	Hongkong & China, Ltd. ...	1 2/32—1 4/32	...	...
213,200	Stk.	Aug. 12	6	6	Hornsey Con. 3½ p.c. ...	130—135	...	...
5,600,000	,,	Nov. 4	14	8	Imperial Continental Cap. ...	185—190	...	187—188¾
223,130	,,	July 22	3½	3½	Do. 3½ p.c. Red. Debs.	92—97	...	95—96
285,242	,,	Aug. 12	8½	8½	Lea Bridge 5 p.c. Ord. ...	175—180	...	...
165,736	,,	Aug. 26	10	8	Maidstone 5 p.c. Cap. ...	182—192	...	...
63,480	,,	Dec. 16	3	3	Do. 3 p.c. Deb. ...	79—84	...	80
75,000	,,	Dec. 2	†10	†10	Malta & Mediterranean	200—210	...	...
					Metropolitan (of Melbourne)			
392,000	—	Oct. 1	5½	5½	5½ p.c. Red. Deb.	98—103	...	...
231,978	Stk.	Aug. 12	5	5	M.S. Utility 'C' Cons. ...	108—113	...	...
818,657	,,	,,	4	4	Do. 4 p.c. Cons. Pref.	100—105	...	105½
360,075	,,	Dec. 16	4	4	Do. 4 p.c. Deb. ...	101—106	...	...
148,955	,,	,,	5	†5	Do. 5 p.c. Deb. ...	120—125	...	...
125,000	—	Jan. 2	3½	3½	Do. 3½ p.c. Rd. Rg. Bds.	96—99	...	...
675,000	Stk.	Nov. 18	†3	†3	Montevideo, Ltd.	48—53	...	52
225,000	,,	Aug. 12	7½	7½	North Middlesex 6 p.c. Con.	170—175	...	...
396,160	,,	Aug. 12	5	5	Northampton 5 p.c. max. ...	105—110	...	...
300,000	,,	Nov. 4	†7	†9	Oriental, Ltd....	163—168	...	169½
416,617	,,	Dec. 16	8	8	Plymouth & Stonehouse 5 p.c.	159—164	...	...
504,416	,,	Aug. 12	8½	8½	Portsm'th Con. Stk. 4 p.c. Std.	173—178	...	...
241,446	,,	,,	5	5	Do. 5 p.c. max. ...	110—115	...	...
114,000	,,	July 22	5	5	Preston 5 p.c. Pref.	106—111	...	...
321,961	1	Sept. 23	...	1/-	Severn Val. Gas Cor. Ld. Ord.	22/—23/-	...	22/3—22/6
319,510	1	,,	...	-/10½	,, ,, 4½ p.c. Cum. Pref.	21/9—22/9	...	...
133,201	Stk.	Aug. 12	5	8½	Shrewsbury 5 p.c. Ord. ...	147—152	...	...
90,000	10	May 27	†3	†3½	South African...	3—4	...	7 3/9
1,061,779	1	Sept. 23	1/22	1 2/2	South East'n Gas Cn. Ld. Ord.	27/6—28/6	...	27/9
845,016	1	,,	-/10 6/8	-/10 2/3	Do. 4½ p.c. Red. Cum. Pref.	22/3—23/3	...	22/9—23/-
450,000	Stk.	Aug. 12	4	4	Do. 4 p.c. Red. Deb. ...	100—103	...	...
6,709,895	,,	Aug. 12	6½	5	South Met. Ord.	132—137	+1	133¾—135¾
1,135,812	,,	,,	6	6	Do. 6 p.c. Irred. Pf....	148—153	+1	151½
850,000	,,	,,	4	4	Do. 4 p.c. Irred. Pf....	105—109	...	107⅝
1,895,445	,,	Dec. 16	3	3	Do. 3 p.c. Deb. ...	87—90	...	89½—89½
1,000,000	,,	Jan. 6	5	5	Do. 5 p.c. Red. Deb.	113—116*	...	114
1,543,795	,,	Aug. 12	6	6	South Suburban Ord. 5 p.c....	130—135	+1	132½—135
512,825	,,	,,	5	5	Do. 5 p.c. Pref....	121—126	...	...
500,000	,,	,,	4	4	Do. 4 p.c. Pref....	103—108	...	...
888,587	,,	Dec. 16	5	5	Do. 5 p.c. Deb....	123—128	...	126½—127
250,000	,,	,,	4	4	Do. 4 p.c. Deb....	103—108	...	...
415,907	,,	Dec. 2	...	4	S. Western Gas & Water Ord.	22/6—24/6	...	22/9½—23/6
160,523	,,	Oct. 21	...	...	Do. 4½% Red. Cum. Pref.	22/—23/-	...	...
110,000	,,	Dec. 16	4	4	Do. 4% Red. Deb. ...	98—103	...	103½
647,740	,,	Aug. 12	5	5	Southampt'n Ord. 5 p.c. max.	115—120	...	116½—117½
121,275	,,	Dec. 16	4	4	Do. 4 p.c. Deb.	98—103	...	...
350,000	,,	Aug. 12	5½	5½	Swansea 5½ p.c. Red. Pref. ...	112—117	...	...
200,000	,,	Dec. 16	6½	6½	Do. 6½ p.c. Red. Deb. ...	96—101	...	...
94,000	,,	...	...	...	Do. 3½ p.c. Red. Deb. ...	96—101	...	...
1,076,490	,,	Aug. 12	6½	6½	Tottenham and District Ord.	149—154	...	...
409,835	,,	,,	5½	5½	Do. 5½ p.c. Pref....	130—135	...	133—134½
62,235	,,	,,	5	5	Do. 5 p.c. Pref. ...	120—125	...	...
334,615	,,	Dec. 2	4	4	Do. 4 p.c. Deb. ...	100—105	...	106½
369,774	,,	Aug. 12	7	7	Uxbridge, &c., 5 p.c. ...	152—157	...	...
108,330	,,	,,	5	5	Do. 5 p.c. Pref. ...	117—122	...	...
1,340,521	,,	Aug. 12	7	7	Wandsworth Consolidated ...	159—164	...	160
1,371,373	,,	,,	5	5	Do. 5 p.c. Pref. ...	122—127	...	126
1,317,964	,,	Dec. 16	5	5	Do. 5 p.c. Deb. ...	123—128	...	125—125½
338,300	,,	,,	4	4	Do. 4 p.c. Deb. ...	102—107	...	...
499,735	,,	July 8	6⅔	6⅔	Watford and St. Albans Ord.	153—158	...	157½
200,000	,,	,,	5	5	Do. 5 p.c. Pref. ...	120—125	...	...
200,000	,,	,,	5½	5½	Do. 5½ p.c. Pref. ...	135—140	...	...
200,000	,,	Dec. 2	4	4	Do. 4 p.c. Red. Deb.	98—103	...	...
100,000	,,	,,	...	3½	Do. 3½ p.c. Red. Deb.	96—101	...	...
158,400	,,	Aug. 12	6b	5	Winchester W. & G. 5 p.c. Con.	114—119	...	...

a.—The quotation is per £1 of Stock. *b.*—Paid £3, including 10s. on account of back dividends. * Ex div.
† Paid free of income-tax. ‡ For year. § Actual for three months.

Stock and Share List continued overleaf.

COMPANY NOTICES.

THE GAS LIGHT AND COKE COMPANY.

NOTICE is Hereby Given that an Ordinary General Meeting of the Proprietors of the Gas Light and Coke Company will be held at the Chief Office of the Company, Horseferry Road, Westminster, S.W. 1, on Friday, the 7th day of February, 1936, at Twelve o'clock (noon) precisely, to transact the usual Business, including the Declaration of a Dividend for the Half-Year ending on the 31st day of December last, and to Elect Directors and Auditors in the place of three Directors and one Auditor who will at such Meeting go out of Office in compliance with the Company's Acts and Schemes of Amalgamation, and one Auditor deceased.

By order,
WILLIAM LYLE GALBRAITH,
Secretary.

Chief Office,
Horseferry Road,
Westminster, S.W. 1.
Jan. 20, 1936.

THE GAS LIGHT AND COKE COMPANY.

NOTICE is Hereby Given that an Extraordinary Meeting of the Proprietors of the Gas Light and Coke Company will be held at the Chief Office of the Company, Horseferry Road, Westminster, S.W. 1, on Friday, the 7th day of February, 1936, at 12.30 o'clock in the afternoon, or so soon thereafter as the business of the Ordinary Meeting of the said Proprietors to be held at Twelve o'clock (noon) on the same day shall have been concluded, for the purpose of considering the provisions of the Bills now before Parliament respectively, intituled:

(1) "A Bill to empower the Gas Light and Coke Company to raise additional capital; and for other purposes;" and

(2) "A Bill to confer upon the Gas Light and Coke Company powers with reference to the making of provision for supplies of gas in certain cases; and for other purposes."

At such Extraordinary Meeting the said Bills will be submitted for the consideration and approval of the Proprietors then present in person or by proxy.

Dated this 20th day of January, 1936.

WILLIAM LYLE GALBRAITH,
Secretary of the Company.

Chief Office:
Horseferry Road,
Westminster, S.W. 1.

SOUTH METROPOLITAN GAS COMPANY.

NOTICE is Hereby Given that the Ordinary General Meeting of the Proprietors of this Company will be held at Southern House, Cannon Street, E.C. 4, in the City of London, on Wednesday, the 12th day of February next, at Twelve o'clock noon precisely, to receive the Directors' Report and the Accounts of the Company for the Year ended the 31st of December last; to declare Dividends for the same period; and to elect two Directors and one Auditor in place of those retiring by rotation.

NOTICE IS HEREBY ALSO GIVEN that, in accordance with the Standing Orders of Parliament, an Extraordinary General Meeting of the Proprietors will be held at the same place on the said 12th day of February, 1936, at 12.30 o'clock in the afternoon, or so soon thereafter as the business of the Ordinary General Meeting shall have been concluded, for the purpose of considering, and, if thought fit, of approving, the Bill proposed to be introduced into Parliament in the present session, and entitled:

"A Bill to extend the limits of supply of the South Metropolitan Gas Company; and for other purposes."

The Transfer Books will be closed for both Preference and Ordinary Stocks on and from the 29th day of January next until after the Meeting.

By order,
F. G. BREWER,
Secretary.

Offices:
709, Old Kent Road,
London, S.E. 15,
Jan. 18, 1936.

Continued on next page.

STOCK AND SHARE LIST— Cont.

Stocks Officially Quoted on Provincial Exchanges

Issue. £	Stock or Share	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations. Jan. 17.	Rise or Fall on Week.	Transactions, Lowest and Highest During the Week.
BRISTOL EXCHANGE.								
347,756	Stk.	July 22	6	5	Bath Cons.	123—125	...	...
1,667,250	,,	July 8	5	5	Bristol, 5 p.c. max.	119—121	+1	...
120,420	,,	Dec. 16	4	4	Do. 1st 4 p.c. Deb. ...	102—104	...	...
217,870	,,	,,	4	4	Do. 2nd 4 p.c. Deb. ...	102—104	...	...
328,790	,,	,,	5	5	Do. 5 p.c. Deb.	125—128	...	...
274,000	,,	Aug. 12	5	5	Newport (Mon.) 5 p.c. max....	113—118	...	...
13,200	12	Aug. 26	8½	7	Pontyp'l Gas & W. 10 p.c. 'A.'	14½—15½	...	...
13,600	10	,,	6	5	Do. 7 p.c. 'B.'	11½—12½	...	...
40,000	10	,,	6	5	Do. 7 p.c. 'C.'	11½—12½	...	...
140,778	Stk.	Aug. 12	5	5	Weston-super-Mare Cons. ...	115—117	...	...
64,338	,,	Dec. 16	4	4	Do. 4 p.c. Deb.	98—100	+2	...
33,340	,,	,,	7½	7½	Do. 7½ p.c. Deb.	165—169	...	...
LIVERPOOL EXCHANGE.								
157,150	Stk.	Aug. 12	6½	5	Chester 5 p.c. Ord.	109—114	...	...
92,500	,,	Dec. 16	4	4	Do. 4 p.c. Pref.	100—105	...	...
32,540	,,	,,	3½	3½	Do. 3½ p.c. Deb. ...	91—96	...	...
41,890	,,	,,	4	4	Do. 4 p.c. Red. Deb. ...	100—105	...	...
2,167,410	,,	Aug. 12	6	6	Liverpool 5 p.c. Ord. ...	134½—135½	−1	135—135½
245,500	,,	Dec. 16	5	5	Do. 5 p.c. Red. Pref. ...	103—108	...	...
306,083	,,	Jan. 6	4	4	Do. 4 p.c. Deb. ...	105—107*	...	...
106,280	,,	July 22	10	10	Preston 'A' 10 p.c. ...	206—216	...	...
188,219	,,	,,	7	7	Do. 'B' 7 p.c.	142½—152½	...	...
NEWCASTLE EXCHANGE.								
122,577	Stk.	Aug. 12	8	8	Blyth 5 p.c. Ord.	151—153	...	...
732,000	,,	Aug. 12	5	5	Hartlepool G. & W. Co. & New	118—120	...	...
2,061,315	,,	Aug. 12	5½	5	Newcastle & Gateshead Con.	25 3—25 9*a*	...	...
682,856	,,	,,	4	4	Do. 4 p.c. Pref. ...	107—108	...	...
776,706	,,	Dec. 16	3½	3½	Do. 3½ p.c. Deb. ...	100—102	...	...
277,285	,,	Oct. 21	5	5	Do. 5 p.c. Deb. '43...	105—106	...	...
209,820	,,	Aug. 12	8½	8½	South Shields Con. ...	173—175	...	...
299,542	,,	Aug. 12	6	6	Sunderland 6 p.c. max. ...	129—131	...	...
NOTTINGHAM EXCHANGE.								
542,270	Stk.	Aug. 12	10	7	Derby Con.	175—185	...	...
55,000	,,	Dec. 16	4	4	Do. 4 p.c. Deb. ...	100—105	...	...
84,750	,,	Aug. 26	12	5	Long Eaton 'A' Ord. ...	150—160	...	...
50,000	,,	,,	10	4	Do. 'B' Ord. ...	130—140	...	...
20,000	10	June 7	5	5	Do. 5 p.c. Pref. ...	10—12	...	...
80,000	Stk.	,,	5	5	Do. 5 p.c. Deb. ...	117—122	...	...
SHEFFIELD EXCHANGE.								
10,000	Stk.	Aug. 26	10	10	Great Grimsby 'A' Ord. ...	220—230	...	...
6,500	,,	,,	10	10	Do. 'B' Ord. ...	220—230	...	...
79,000	,,	,,	10	10	Do. 'C' Ord. ...	205—215	...	...
1,736,968	,,	Aug. 26	6	6	Sheffield Cons.	142—143	...	...
95,000	,,	Dec. 16	4	4	Do. 4 p.c. Deb.... ...	100½—102½	...	...

a The quotation is per £1 of Stock.

Supplementary List of Stocks and Shares not Officially Quoted

60,000	10	Sept. 9	10	10	Ascot 10 p.c. max.	22—24	...	...
58,680	10	,,	7	7	Do. 7 p.c. max.	14½—15½	...	...
90,000	1	Nov. 4	5	5	Assd. Gas and Water Ord. ...	21/—23/-	...	21/9—21/10½
90,000	1	,,	4½	4½	Do. 4½ p.c. Cum. Pref. ...	21/9—22/9	...	...
17,000	Stk	Aug. 26	8	8	Bognor Orig. Ord. 'A' ...	164—174	...	...
62,210	,,	,,	8	8	Do. New Addl. 'A' ...	164—174	...	...
87,160	,,	,,	7	7	Do. New 7 p.c. max. ...	142—147	...	...
37,440	,,	July 22	10	10	Cam.Univ. & Town 10 p.c.max.	214—224	...	...
125,970	,,	,,	7	7	Do. 7 p.c. max.	161—166	...	...
39,025	,,	,,	5	5	Do. 5 p.c. max.	110—115	...	...
65,000	,,	Aug. 12	8½	7½	Eastbourne 'A' 5 p.c. ...	153—158	...	...
198,000	,,	,,	7	6	Do. 'B' 3½ p.c.	135—140	...	...
112,312	,,	,,	5	5	Do. 5 p.c. Pref.	120—125	...	...
130,000	,,	Dec. 16	5	5	Do. 5 p.c. Deb.	122—127	...	...
250,000	1	Nov. 18	...	4	Gas Consolidation Ord. ...	20 6—22 6	...	...
250,000	1	,,	...	4	Do. 4 p.c. Red. Cum. Pref.	19 6—20 6	...	20/-
117,251	Stk.	Sept. 23	8 1/10	8 1/10	Gosport District Cons. ...	177—182	...	...
73,350	,,	,,	5	5	Do. 5 p.c. Pref.	113—118	...	...
24,000	30	Aug. 12	8½	8½	Great Yarmouth 8½ p.c. max.	53—58	...	...
59,400	30	,,	7½	7½	Do. 7½ p.c. max.... ...	43—46	...	...
51,160	Stk.	Dec. 2	5½	5½	Do. 5½ p.c. Deb.... ...	123—128	...	...
152,600	,,	Aug. 26	8	8	Guildford Cons.	170—175	...	...
54,055	,,	,,	5	5	Do. 5 p.c. Pref.	116—121	...	...
68,250	,,	Dec. 16	5	5	Do. 5 p.c. Deb.	120—125	...	...
156,600	,,	Aug. 12	7½	7½	Hampton Court Cons. ...	170—180	...	...
81,660	10	Feb. 4	9	9	Leatherhead Ord.	16—17	...	...
107,960	10	Sept. 23	5	4	Mid Kent Ord.	9½—10½	...	...
230,445	Stk.	Aug. 12	10	10	Oxford & District Ord. ...	215—225	...	...
47,112	,,	,,	5	5	Do. 5 p.c. Pref.	117—122	...	...
50,000	,,	,,	6	6	Do. 6 p.c. Red. Pref. ...	115—120	...	...
126,193	,,	Nov. 18	7½	7½	Peterborough Ord.	160—170	...	...
64,990	,,	Sept. 9	7½	6½	Redditch Ord.	116—121	...	...
66,850	,,	Aug. 12	7	7	Romford Ord.	167—172	...	...
160,000	,,	,,	4	4	Do. 4 p.c. Pref.	97—100	...	...
44,000	,,	Sept. 23	5	5	Do. 5 p.c. Deb.	121—126	...	...
10,950	,,	Aug. 26	8	8	Ryde Ord.	168—173	...	...
136,191	,,	July 22	7	5	Scarborough Ord.	130—140	...	...
277,825	,,	Aug. 26	8	8	Shanklin & Ventnor Cons. ...	155—165	...	...
40,643	,,	Sept. 23	7	7	Slough Ord.	150—155	...	...
221,000	,,	Dec. 16	5	5	Do. 5 p.c. Deb.	116—121	...	...
28,872	1	Nov. 4	5½	5½	S. Midland Gas Cpn.Ltd. Ord.	20/—22/-	...	...
28,866	1	Sept. 9	4½	4½	Do. 4½ p.c. Red. Cum Pref.	20/—22/-	...	...
24,930	Stk.	Aug. 12	7	7	Southgate & Dist. 7 p.c. max.	150—155	...	...
162,500	,,	,,	5	5	Do. 5 p.c. Pref.	117—122	...	...
17,228	,,	Aug. 12	6	5	Swindon Cons.	113—118	...	...
160,425	,,	Dec. 16	5	5	Do. 5 p.c. Deb.	120—125	...	...
50,000	1	...	...	...	Utd. Kingdom Gas Cpn. Ord.	1 1/16—1 1/16	...	22/-
760,910	1	Nov. 18	...	2½	Do. 4½ p.c. Prefd. Ord....	19 6—20 6	...	...
110,910	1	,,	...	2½	Do. 4½ p.c. Cum. Pref. ...	20/6—21 6	...	20/9—21/-
900,000	Stk.	,,	...	...	Do. 3½ p.c. Red. Deb. ..	98—101	...	...
430,000	,,	Aug. 12	8	5	Wakefield Ord.	140—150	...	...
181,650	,,	...	5	5	Do. 5 p.c. max.	103—108	...	...
82,000	,,	July 22	6	6	Weymouth Ord.	108—113	...	...
70,000	,,	,,	6	4	York Cons.	107—112	...	...
390,000	,,	Dec. 16	5	5	Do. 5 p.c. Red. Deb. ...	103—108	...	...
33,640	,,	Aug. 12	6½	6½	Yorktown (Cam.) 5 p.c. Cons.	120—125	...	...
100,000	,,	,,	5	5½	Do. 5 p.c. Pref.	117—122	...	...
135,000	,,	Dec. 16	5½	5	Do. 5½ p.c. Deb.... ...	126—131	...	...

COMPANY NOTICES

(Continued).

SOUTH SUBURBAN GAS COMPANY.

NOTICE is Hereby Given that the Transfer Books relating to the Ordinary and Preference Stocks of this Company will be closed from 8th February to 21st February, both days inclusive.

By order of the Board,
T. BROWN,
Secretary.

Chief Office,
Lower Sydenham, S.E. 26,
Jan. 10, 1936.

THE CROYDON GAS COMPANY.

NOTICE is Hereby Given that an Annual Ordinary General Meeting of the Company will be held at the Company's Offices, Katharine Street, Croydon, on Friday, the 21st day of February, 1936, at Five o'clock in the afternoon precisely, to receive the Report of the Directors and the Statement of Accounts for the Year ended 31st December last; to declare Dividends; to elect two Directors and an Auditor in the places of those who go out of office at the said Meeting, but who, being eligible, will offer themselves for re-election; and for transacting the General Business of the Company.

The Register of Transfers of Redeemable Preference and Ordinary Stocks of the Company will be closed from the 25th January to the 7th February, both days inclusive.

Dated this 10th day of January, 1936.

By order of the Board,
FRANK FILLINGHAM WOOD,
Secretary.

Chief Offices,
Katharine Street,
Croydon.

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Officer-in-Charge of Training, The Gas Light and Coke Company, Assistant Head of Department of Gas Engineering and Supply, Westminster Technical Institute.

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